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SAFETY AND SEISMIC SAFETY ELEMENT OF THE KERN COUNTY GENERAL PLAN

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COUNTY

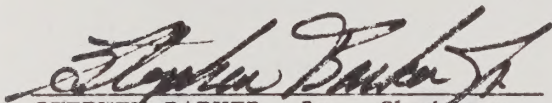
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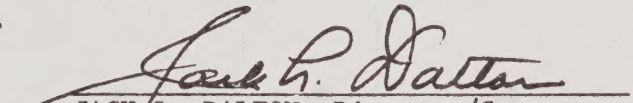
COMMISSION

CERTIFICATION OF ADOPTION

KERN COUNTY PLANNING COMMISSION

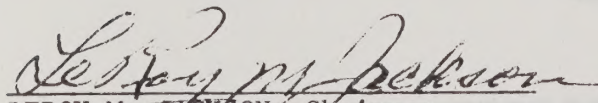
By Resolution Number 115-75, dated November 17, 1975, the Kern County Planning Commission adopted the herein-contained Safety and Seismic Safety Element of the Kern County General Plan after conducting a public hearing in compliance with all statutory requirements of the State of California and all ordinance requirements of the County of Kern.

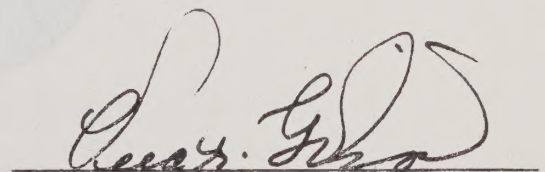

STEPHEN BARKER, Jr., Chairman
Kern County Planning Commission


JACK L. DALTON, Director/Secretary

KERN COUNTY BOARD OF SUPERVISORS

By Resolution Number 76-1, dated January 5, 1976, the Kern County Board of Supervisors adopted the herein-contained Safety and Seismic Safety Element of the Kern County General Plan after receiving a recommendation thereon from the Kern County Planning Commission and conducting a public hearing pursuant to all statutory requirements of the State of California and all ordinance requirements of the County of Kern.


LEROY M. JACKSON, Chairman
Kern County Board of Supervisors


VERA K. GIBSON, County Clerk and
Ex-Officio Clerk of the Board of
Supervisors

00054

SEISMIC SAFETY and SAFETY ELEMENT

**OF
THE KERN COUNTY GENERAL PLAN
including**

**fire-flood-seismic
and
other geologic hazards**



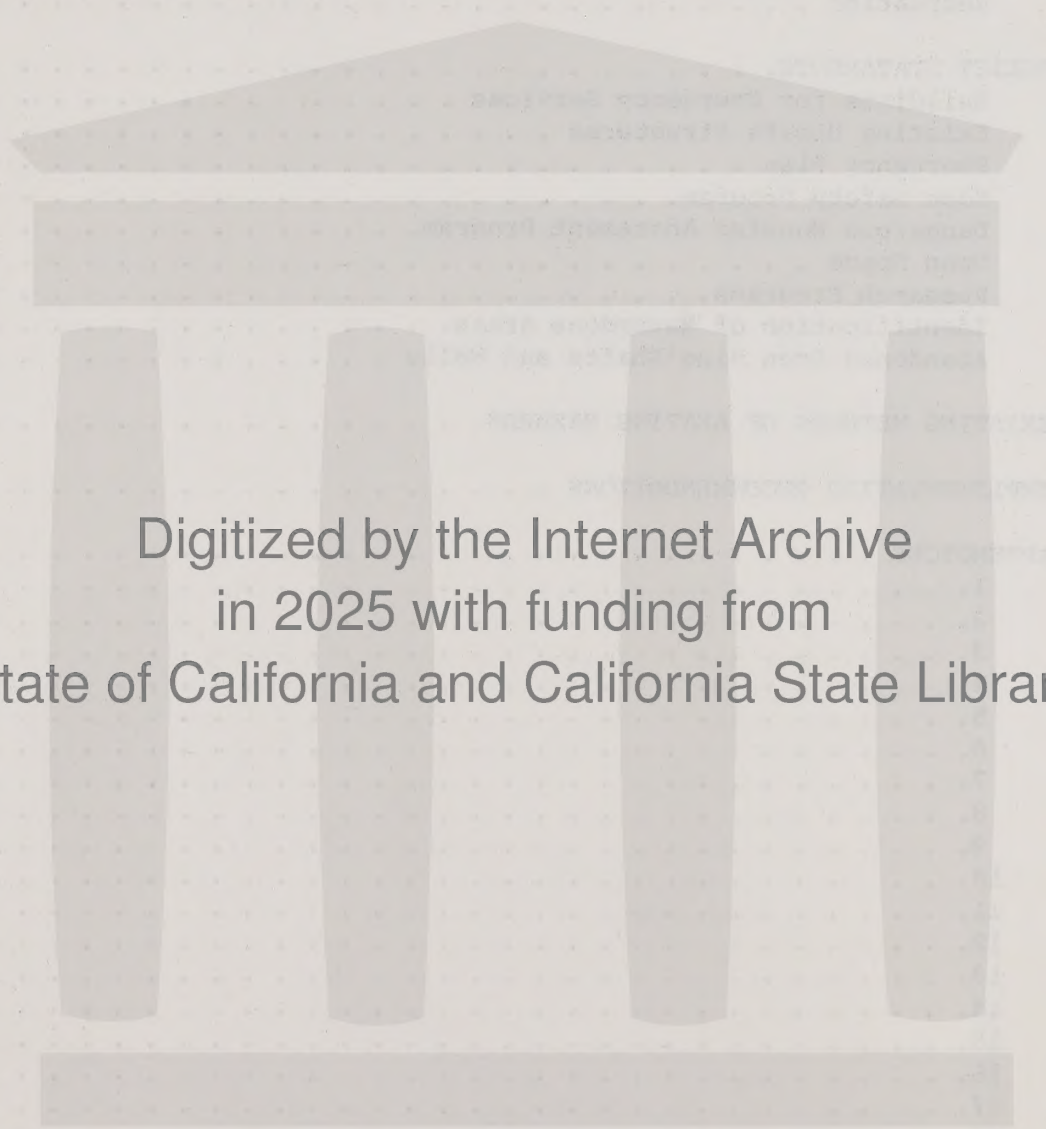
prepared by

**The Kern County Planning Department
Advance Planning Division**

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INTRODUCTION

AUTHORITY

In response to a number of floods, fires, landslides, and earthquakes which have been responsible for an irreplaceable loss of life and property in California in recent years, the 1971 State Legislature amended the Government Code, thereby adding two more mandatory elements to the list of those which must be adopted by all cities and counties in the State of California as part of a general plan. The new elements are the safety element and the seismic safety element.

Section 65302.1 of the code requires as follows:

A safety element for the protection of the community from fires and geologic hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, minimum road widths, clearances around structures, and geologic hazards mapping in areas of known geologic hazard.

Section 65302(f) requires:

A seismic safety element consisting of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground shaking, to ground failure or to the effects of seismically induced waves such as tsunamis and seiches. The seismic safety element shall also include an appraisal of mudslides, landslides, and slope stability as necessary geologic hazards that must be considered simultaneously with other hazards such as possible surface ruptures from faulting, ground shaking, ground failure and seismically induced waves.

PROCEDURE

Combining Seismic Safety and Safety Elements

The problems of evaluating and dealing with seismic hazards and other types of hazards are similar and considerably overlapped. The guidelines for preparation of general plan elements suggest that the safety and seismic safety elements may be combined into a single document. The County of Kern has elected to follow this procedure. This element presents the various hazards that exist and may occur in Kern County and proposes a program for dealing with these hazards for the protection of life and property.

Limitations of the Data

The degree of understanding of many geologic phenomena is not as great as desired for some practical planning purposes, such as prediction of the time, location, and magnitude of earthquakes. Therefore, the possibility of irregular, unanticipated, seismic occurrences is constantly present.

In addition, much of the knowledge of surface geologic features is based upon the recognition and interpretation of characteristic landforms. In some cases, these interpretations are highly reliable. There are, however, many processes which modify the landscape. These processes occur over an extremely long period of time, and not all their mechanisms and interrelationships are well understood. Because of this lack of understanding, the interpretation of some landforms as being suggestive of geologic hazards is uncertain.

The geologic study for Kern County provides knowledge on the type, location, and extent of hazardous geologic conditions and provides a basis for land use decisions on an expanded scale. However, the data contained in these elements are not sufficient as a basis for specific site evaluation such as required for a subdivision, road alignment, or location and construction of a dam. These kinds of evaluations may require detailed geologic mapping, subsurface exploration by drilling and trenching, soil sampling, and laboratory tests.

PURPOSE

The purpose of this element is to introduce safety considerations into the planning process in order to accomplish the following primary objectives:

- To minimize injuries and loss of life.
- To reduce property damage.
- To reduce economic and social disruption resulting from earthquakes, fire, flooding, and other geologic hazards by assuring the continuity of vital services and functions.
- To assist in the allocation of public resources in Kern County to develop information regarding geologic, fire, and flood safety hazards and to develop a systematic approach toward the protection of public health, safety, and welfare from such hazards.
- To create an awareness of the people of Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

SCOPE

- To prepare a document, in accordance with the mandated requirements of the State of California, that will identify seismic and other geologic safety hazards, fire and flood safety hazards,

establish basic goals, and formulate policy recommendations for legislative implementation, as such goals and policy recommendations apply to the planning process through the designation of land uses.

- To present data identifying and evaluating the known safety hazards with respect to severity and frequency of occurrence, with an analysis of hazardous land use relationships.
- To define regulations and programs needed to prevent, regulate, or mitigate the effects of hazardous conditions or occurrences in the developed and natural environments of Kern County.

ASSUMPTIONS

Certain assumptions must be made in the preparation of this element to form a basis for projecting viable policy statements and recommendations. The following assumptions have been made:

- The regulation of land uses will remain under local supervision, legislation, and enforcement, although certain federal and state policies and programs may require compliance.
- As currently projected, the population of Kern County will continue to increase at a gradual rate. Presently, the projected annual rate of growth is 8 persons per 1,000 population.
- Agricultural use will continue under the provisions of the California Land Conservation Act of 1965, as amended.
- The percentage of the total population living in urbanized areas will continue to increase.
- Recreational subdivision development in rural Kern County will sustain little increase in permanent population in areas where employment possibilities are nonexistent.

SUPPORTING DOCUMENTATION

This report is accompanied by or refers to the following supporting documentation:

- * Geology and Earthquake Hazards: A Planning Guide to the Seismic Safety Element of Kern County, California. An atlas of quadrangle

* Copies may be studied at the Kern County Planning Department Office

maps showing the geological features was prepared for use in conjunction with the text.

- * Kern County Emergency Plan: The purpose of this plan is to provide maximum attainable protection for life, property, and community facilities in the event of a disaster, natural or man-made.
- ** Kern County Codes of Building Regulations including:
 - Article 1, General Provisions - Ordinance G-2086
 - Article 2, Building Code - Ordinance G-2086
 - Article 3, Mechanical Code - Ordinance G-2086
 - Article 4, Housing Code - Ordinance G-2086
 - Article 5, Dangerous Building Code - Ordinance G-2086
 - Article 6, Plumbing Code - Ordinance G-2086
 - Article 7, Electrical Code - Ordinance G-2119
 - Article 8, Relocation of Buildings - Ordinance G-1095
 - Article 9, Mobilehomes and Accessory Structures - Ordinances G-1677 and G-2086
- * Fire Code, 1973 edition
- ** Grading Ordinance
- * Zoning Ordinance
- * Subdivision Ordinance
- * Parcel Map Ordinance
- *** Fire Protection Regulations and Fire Department Rules
- *** California Health and Safety Code
- *** California Public Resources Code Division 4, Part 2, and
- * Geologic Hazard Zones Act
- *** California Administrative Code Titles 19 and 24
- *** Home Safety Program Regulations of the Kern County Fire Department

ACCEPTABLE RISK

The state guidelines for preparation of the safety and seismic safety element require local governments to specify the "level or nature of acceptable risk to life and property." The guidelines state:

- * Copies may be studied at the Kern County Planning Department Office
- ** Building Inspection Department
- *** Kern County Fire Department

With maximum citizen input "acceptable risk" should be determined. In making this determination, it should be kept in mind that any attempt to develop the appropriate planning response to potential hazard involves a judgment, either explicit or implicit, of how much risk is acceptable. There is no such thing as a perfectly hazard-free environment. Natural and man-made hazards of some kind and degree are always present. However, efforts can be productively undertaken to try to mitigate the consequences of known hazards.

In the context of the safety and seismic safety elements the problem of risk is one of public policy and the appropriate allocation of public resources to mitigate hazards. The central question is, "How safe is safe enough?"

Risk may be defined in this context as "the degree of probability of a hazardous occurrence." Because hazardous events are not predictable, many obstacles are met when attempting to plan for such occurrences. In this instance, the planning process must be one of policy recommendations, implemented to the degree that the public is economically willing to support.

Therefore, the public must be made cognizant of the known hazards, and the alternatives for mitigating such hazards, relative to the value placed on the degree of mitigation.

CONSIDERATIONS

There are several important aspects of the concept of acceptable risk which must be considered in the decision-making process.

COST -- Minimizing risk often results in higher cost. The final decision is a balance of the costs involved and the level of risk desired. At some point, a risk becomes in some way acceptable. This means that the public is no longer willing to pay more to reduce the risk any further. The cost of further risk reduction must be weighed against other uses of funds which might be more beneficial to the community.

ALTERNATIVES -- The concept of acceptable risk may seem strange, but it is actually a part of everyday life. All activities have some risk associated with them. There are no alternatives that are without risk. Thus, risk can only be understood when compared to other risks that are identifiable to the public, such as automobile accidents.

WILLINGNESS -- There is a difference between a risk taken willingly and one taken unwillingly. The unwilling risks should be lower than those taken willingly.

AWARENESS -- There is a difference between those risks taken unknowingly by the public and those taken with full awareness. Everyone should be aware of the risks he faces, and it is a proper function of public agencies to provide this information.

BALANCE -- To the extent possible, the risks should be so balanced that those people receiving the benefit are also those undertaking the risk. This implies that no one should be subjected to an increased risk without receiving a corresponding increase in benefit. An example of a proper balance would be a person freely accepting the risk of harm from seiches in order to live at the edge of a lake. An example of an improper balance would be the developing of residential lots straddling an active earthquake fault to sell to unsuspecting buyers.

MITIGATION -- It should be noted that there are several ways by which risk can be reduced. These include physical alterations of buildings; relocation, demolition, or changing the use of a structure; prohibiting construction in some areas; and restriction of certain land uses in hazardous areas.

In the past, the public has, directly or indirectly, let their feelings be known to supervisors, planning commissioners, councilmen, etc. as to how much risk they are willing to accept. The feelings of the general populace have been fairly clear when it comes to assuring a safer environment for themselves. Countywide, the acceptable risk seems to vary from place to place depending on the hazard involved as it varies from person to person. Some people are willing to accept greater risks in one area than people in another area in order to enjoy benefits a particular locale may offer.

Many decisions on acceptable risk are personal decisions that an individual must make privately; it would be difficult, if not impractical, for a governing body to decree the level of risk all citizens should accept or underwrite. People will accept many different levels of risk in different areas of the country. Others are unwilling to help finance the reduction of hazards in areas of the county apart from where they live and work. Kern County is a big and diverse county with a large array of hazards, people, and amenities.

It is important, however, that the hazards of a locale or region be known so that the individual can choose what is acceptable. Likewise, an awareness of the hazards can enable citizens, either individually or collectively, to intelligently inform their elected representatives what risks they are willing to endure or how much they are willing to fund or otherwise regulate themselves to reduce the risk that may be involved.

IDENTIFICATION OF HAZARDS

SEISMIC

Much of the damage produced by an earthquake can be avoided if, during routine fire and other building inspection programs, attention is called to items that could be hazardous during an earthquake. Many fires are

caused by improper storage of chemicals and solvents. Injury may result from the fall of unstable objects such as bookcases, filing cabinets, pictures, and fluorescent light fixtures. Corrective measures are simple and inexpensive. A public awareness of such problems should be created by working with property owners and by appropriate publicity given to the identification of such situations.

Generally, the existing substandard structures of all types and materials constitute the greatest seismic hazard to a community, and mitigation processes should be accelerated. There should be a continual ongoing program to reach a status of economically acceptable safety, commensurate with the degree of structural soundness the community is willing to support.

The public should have explicit notice of buildings that constitute potential seismicly induced structural hazards. This could be accomplished by requiring all potentially dangerous structures to be posted with signs indicating that their seismic safety is suspect.

☐ Ground Shaking

Kern County is located in one of the more seismically active areas of California and may, at any time, be subject to moderate or severe ground shaking. This hazard exists because elastic strains that accumulate deep within the earth become so great that the rock can no longer be contained as a single rock mass. When this happens, movement along a fracture zone occurs, releasing enormous amounts of energy, creating two or more rock masses.

At any given location, the amount of the resulting shaking motion caused by the sudden movement depends to a large extent on local ground conditions--i.e., the degree of water saturation, etc.--and may be as severe ten miles from the fault as immediately adjacent to it. In some instances, the shock wave may actually increase in amplitude as it travels away from the source. It may cause greater damage at a location some distance from the actual rupture than at the point of surface displacement.

☐ Ground Failure

Small landslides are common in our mountain areas as loose material moves naturally down slope. In addition, many human activities tend to make the earth materials less stable and, thus, increase the chance of ground failure. Some of the natural nonseismic causes of ground instability are stream and lake shore erosion, heavy rainfall, and poor quality natural materials. Man also contributes to instability through oversteepening of slopes by cutting them for roadways or overloading them with artificial fill, by extensive irrigation, poor drainage, excessive groundwater withdrawal, and removal of stabilizing vegetation.

Landslides

Landslides have been shown on the maps in the Seismic Hazard Atlas.* Additional landslide areas may subsequently be identified and should be added to these maps. Development in landslide areas is an unwise practice that imposes an unnecessary risk on life and property. The slide-prone area may have reached a state of equilibrium and become stable for a number of years; however, the factors that caused the original slide could reoccur and cause additional movement. Added moisture injected into the soil by water and sewer systems tends to be detrimental in unstable areas, thus increasing the probability of slides.

Landslide-prone areas can be identified with great accuracy by geologic studies and, when mapped in sufficient detail, can be used for reference in land use planning. The severity of landslide problems depends upon the local bedrock and soil conditions, including moisture content, slope, and vegetation.

Losses due to landslides can be almost totally eliminated by a combination of geologic investigations, engineering practice, use of hazard area zoning, and effective enforcement of the Zoning and Grading Ordinances.

Flooding

Flooding induced by seismic activity may be of significance in areas where earth movement causes failure of dams, canal banks, or where landslides block drainage channels, streams, and/or rivers.

Land Subsidence

Land subsidence is occurring within the San Joaquin Valley (see Appendix 4). This type of ground failure can be aggravated by ground shaking. It is most often caused by the withdrawal of large volumes of fluids from underground reservoirs, but it can also occur by the addition of surface water to certain types of soils (hydrocompaction).

Subsidence from any cause accelerates maintenance problems on roads, lined and unlined canals, and underground utilities. All new installations in areas suspected of subsidence should be engineered to withstand such subsidence. The usual remedial action is that of raising the water table by injecting water or by reducing ground pumpage. This increases the fluid pressure in the aquifer and, in most instances, subsidence decreases or stops after a period of time.

* See "Geologic and Earthquake Hazards: A Planning Guide to the Seismic Safety Elements of Kern County."

There are four types of subsidence occurring in Kern County.

Tectonic subsidence, a long-term, very slow sinking of the valley trough, significant only over a geologic time period.

Subsidence caused by the extraction of oil and gas. This type of subsidence is still too small to be of serious concern. The State Division of Oil and Gas monitors subsidence in oil and gas fields and regulates oil and gas withdrawal and repressuring of the fields.

Subsidence caused by withdrawal of groundwater in quantities much larger than replacement can occur, causing a decline of the water level. This type of subsidence is of major concern and should be regulated and reduced, especially in urbanizing areas. This practice has lowered the ground level over a large area south of Bakersfield and in other areas of the county.

Subsidence caused by hydrocompaction of moisture-deficient alluvial deposits. This is a one time densification from collapse of the soil structure in near-surface strata where the rainfall or other moisture has not penetrated during a long period of time. Parts of the California Aqueduct were constructed through and over hydrocompaction deposits after compaction had occurred through ponding. The areas where hydrocompaction exists and suspect areas should be mapped, studied, and evaluated. Any development on these areas of damaging subsidence requires corrective measures.

Clay Soils

Fine-grained, cohesive clay soils, that expand when moisture is added, tend to lose their ability to support foundations of structures. The weight of these structures squeezes the water-saturated clays laterally from under the foundations.

A soils report, prepared by a soils engineer, should be required for every new building permit in suspect areas. This report should be based upon adequate test borings, excavations, soil and chemical tests, approved by the Building Official, and should include recommendations for corrective measures when necessary.

The Building Official may waive the requirement for a soils report if he determines there is adequate information on the soil qualities of a particular lot available for review by the department.

Liquifaction

Liquefaction can occur in certain types of soils that are associated with a shallow water table. It has been observed in many areas of the world that ground shaking produced by earthquakes tends to cause liquefaction to the extent that buildings have fallen over on their

sides due to the lack of ground support. Some buildings especially designed to withstand earthquake shock waves have been uninhabitable because they tipped but were structurally undamaged. The design was good for all except the foundation, which failed because liquefaction occurred during an earthquake.

Erosion

Erosion is the general process whereby the materials of the earth's crust are worn down, removed by weathering, and deposited in other places by the flow of water and air.

Losses due to erosion can be greatly reduced by properly engineered design and construction and effective enforcement of the ordinance relative to grading, landscaping, and drainage (Uniform Building Code).

Lakeshore erosion is a special problem involving wave action and can be practically eliminated by proper engineering, construction, and control by vegetative cover.

Within urbanized areas, the major cost of erosion is caused from the continued need to remove sediment from drainage systems and basins.

Erosion induced by seismic activity occurs on gentle to steep slopes covered by unconsolidate sediments. This geologic hazard is aggravated by landslides, fissures, tilting, and offset along a fracture zone. It could become a significant hazard in many areas of the county. The flood management program should also provide protection against this type of geologic hazard.

☐ Surface Fault Rupture

Surface fault ruptures are designated on the maps in the Seismic Hazard Atlas, as well as some faults that are not apparent at the surface. It must be recognized that some faults may not have been recognized, either because the evidence for detecting them has not been preserved or that there has not been sufficient work in the area to detect their presence. Several maps in the atlas have a special note to this effect in order to call the users' attention to this lack. It could be said that all maps need additional work because all surface and subsurface information has been collected and analyzed. This statement of fact should not prevent the use of that information which is available. As new geological and geophysical data are collected and analyzed that are pertinent to this study, they should be added to the maps.

Known faults must be considered in planning and land use activities. The faults identified as active deserve special consideration. No structure should be built astride an active fault. Utilities that cross such faults, both underground and on the surface, must be designed to remain

operable if at all possible after fault movement. The Seismic Hazard Atlas maps show the approximate location of these features. Building permit applications must identify the exact location of proposed structures so that proper evaluation may be accomplished by the building official prior to the issuance of any permits.

FIRE

☐ Access and Evacuation Routes

Good planning principles, as well as existing policies and laws, dictate that all developments must be planned with circulation routes that will assure safe access for fire and other emergency equipment. The circulation routes must include secondary means of ingress and egress, consistent with topography, to meet emergency needs.

The general circulation routes presently provided throughout the county by federal, state, and county-maintained road systems are adequate for access and evacuation. Standards for new public circulation routes are regulated by state and county laws.

Private circulation routes that are not maintained by the state or county are subject to the standards set forth in Kern County Ordinance No. G-1832.

☐ Clearance of Vegetative Cover for Fire Control

In 1963 the State of California enacted the Public Resources Code clearance law. This is a minimum statewide clearance law of flammable vegetative growth around structures, especially in brush- and tree-covered watershed areas. The enactment of a local ordinance is necessary where more restrictive fire safety clearance measures are desirable to meet local conditions. (See Appendix 10 for selected sections of the Public Resources Code.)

☐ Fuel Breaks and Firebreaks

Fuel breaks and/or firebreaks separating communities or clusters of structures from the native vegetation may be required. Such fuel breaks may be "greenbelts," as all vegetation need not be removed but thinned or landscaped to reduce the volume of fuel.

All fuel and fire breaks are required to meet the minimum design standards of the Kern County Fire Chief. (See Appendix 11.)

A fire plan may be required by the Fire Chief during the critical fire season. Such plan is to reflect the proposed plan of operation on the development for fire prevention and suppression.

The parcel size and setback distances of buildings placed thereon should be such that adequate clearance of flammable vegetation cover may be performed within the limits of the owner's parcel of land.

Should the owner of a property fail to effect the required firebreak clearance following proper notice, the County of Kern may cause the clearing to be done and make the expense of such clearing a lien against the property upon which the work was accomplished.

☐ Water Supply for Fire Control

Water is the most important factor in fire fighting. Therefore, an adequate and reliable water supply must be provided specifically for this purpose. Minimum requirements of water flow are determined by the Kern County Fire Chief and are described in Section 7259.11 of the Kern County Zoning Ordinance. (See Appendix 12.)

Section 7259.11 does not apply to existing single-family housing units, which results in the majority of housing units in Kern County being without this protection.

The Fire Department promotes the installation of fire hydrants in areas served by water companies.

In areas served by a water purveyor, single-family residences constructed on existing parcels of record may be provided with a suitable water supply for fire fighting based on the requirements set forth under Section 7259.11 of the Kern County Zoning Ordinance.

☐ Hazardous Fire Area

The Hazardous Fire Area consists mainly of wildlands, which are mountain and hill land in an uncultivated, more or less natural state, covered with timber, wood, brush, and grass lands. This area includes some urban influence and agricultural use, such as exists around Isabella Lake and the Kern River, Woody/Glenndale, Tehachapi/Cummings Valley, and Lebec/Frazier Park/Lake of the Woods.

The wildlands provide prime habitats for deer, mountain lions, bear, kit fox, quail, chukar, wild turkey, and condor. They also harbor fifteen identified and important rare botanic communities and vegetation associations.

Less than 3.6 percent of the total Kern County population resides within the Hazardous Fire Area, which consists of close to 40 percent of the total county area. If the small agricultural and urbanized areas within the Hazardous Fire Area are deducted, the balance of the area will be wildlands with less than .7 percent of the total Kern County population.

The Kern County Hazardous Fire Area was established by an amendment to the Uniform Fire Code, Section 1.49H under Section 4016 of the Kern County Ordinance Code. (See Appendix 13.)

The boundaries of the Hazardous Fire Area are determined and publicly announced before the start of each annual "fire season" and is normally the period from April 15 to December 1 of each year, except when the Fire Chief extends this period.

The wildlands include valuable watersheds, that must be preserved for receiving and passing water into surface streams and underground storage. Protection of the watersheds will prevent erosion and flood damages.

The wildlands yield forest and range products upon which many families depend. They are also extensively used for recreation, a use that is expected to increase in the future.

Land developers working within the wildlands should be made responsible for providing a fuel management program consistent with the fire protection requirements.

For the protection of our wildlands we must consider all factors which will aid in fulfilling the policy stated in the California Environmental Quality Act, Public Resources Code Section 21000 et seq., to "create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations."

(See map of "Hazardous Fire Area," Appendix 3.)

FLOODING

Flood damage to undeveloped areas is caused mainly because structures have been located within a floodplain. Any further development within recognized floodplains will be required to pass adopted floodplain regulations in the future.

☐ National Flood Insurance Program

The National Flood Insurance Program of the Federal Department of Housing and Urban Development authorizes flood insurance payments only once and prevents rebuilding within the flood zones.

Kern County's eligibility for the sale of flood insurance in the National Flood Insurance Program has been approved by the Federal Insurance Administrator of the Department of Housing and Urban Development, effective January 18, 1974. The eligibility was based on the land use control measures adopted by the Kern County Board of Supervisors to reduce or to avoid future losses in its flood-prone areas in accordance with the regulations of the National Flood Insurance Act.

☐ Flood Hazard Maps

The flood hazard areas are or will be shown on documented maps known as "Flood Hazard Boundary Maps," wherein specific engineering studies have been accomplished and definite waterways and floodplains have been identified and located.

☐ Flood Hazard Zoning

The flood hazard area is the area of the "designated floodway" bounded by the "floodway encroachment lines," including the land necessary to carry the "design flood" or "zoning flood" under conditions of full encroachment. These are based on a flood which can be reasonably expected to occur at a 100-year frequency.

A map of the general "Kern County Drainage Areas" is included (Appendix 5) and shows the general direction of natural water flows within the county.

The application of flood hazard zoning (see Article 21 of the Kern County Zoning Ordinance, Section 7190.9 et seq.) to areas subject to flood hazard will provide improved protection for the general public.

☐ Kern County Inundation Mapping Program

Flooding resulting from inundation caused by a dam and/or dike failure is presently under study by the California State Offices of Emergency Services (OES) and Planning and Research (OPR). Inundation maps are being prepared pursuant to Section 8589.5 of the Government Code and will become a mandatory consideration in the safety and seismic safety elements when completed and approved by the Office of Emergency Services.

The following dams and dikes are included in the Kern County inundation mapping program.

Isabella Lake Dam

Maps are being prepared by the U. S. Army Corps of Engineers.

Brite Valley Dam

Maps are being prepared by the Tehachapi Cummings Water District.

UNSAFE BUILDINGS

Generally, existing substandard structures of all types and materials pose the greatest hazard to a community. Special consideration is given to unsafe buildings in the Kern County Ordinance Code, including the Uniform Building, Housing, Fire, and other Codes adopted by reference.

Any building declared an unsafe building under the Kern County Ordinance Code is required to be either repaired in accordance with the current edition of the regulations or demolished at the option of the building owner.

The Kern County Building Official is authorized to enforce these provisions with the exception of residential buildings, used or intended to be used for human habitation, which are subject to abatement under the requirements of the Kern County Health Officer. (See Appendix 14 for applicable sections of the Kern County Ordinance Code.)

Although new residential buildings are constructed to code regulations and inspected before occupancy, many older residential structures no longer conform to the code regulations. Kern County, like most counties in the United States, has no program requiring periodic inspection of existing residential buildings for the purpose of upgrading to code requirements.

Inspections of residential buildings showing obvious deterioration, and in cases where complaints have been received, are presently made by Building and Health Department personnel. Any further enforcement of the law has been regarded as infringement of privacy, resulting in the present level of enforcement's being the level of acceptable risk.

In implementing their Fire Prevention Program, Fire Department personnel periodically inspect the areas around all buildings for accumulations of flammable material and closure of openings of vacant buildings. (See selected sections from the Uniform Fire Code in Appendix 15.)

Buildings and other structures indispensable to emergency services, disaster control, and refuge should remain operational during any major disaster and should be designed, located, and constructed accordingly.

All agencies of the Kern County Government are expected to respond promptly and effectively to any foreseeable emergency, using the "Kern County Emergency Plan" adopted by the Board of Supervisors in 1972.

ABANDONED MINE SHAFTS AND WELLS

In some areas of the county, there exist abandoned mine shafts which, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the Federal Government. In some cases, such hazards exist on private land. The same is true of various types of wells which have been abandoned and now pose real threats to the public safety, especially to the safety of small children.

RELATIONSHIPS TO OTHER GENERAL PLAN ELEMENTS

LAND USE ELEMENT

Based on supporting documentation, there are areas where certain land uses should be discouraged. Construction of urban structures in the hazardous areas, whether the hazard be geologic, fire, or flooding, should not be

permitted without proper restrictions. As more precise information is developed permitting "hazard areas" to be more precisely defined, zoning regulations can be amended to restrict uses to only those uses deemed in the best interests of the citizens of the county.

HOUSING ELEMENT

Restrictions should be placed on the construction of housing within known hazard zones.

Expansion of the "Dangerous Housing Abatement Program" should be reflected in the Housing Element.

CIRCULATION ELEMENT

1. Highways -- In the event of a major earthquake or other catastrophe, many roads in the area may be damaged, resulting in closure to traffic for the time needed to bypass or repair the damaged sections. In hazardous areas the road system should include alternate routes for evacuation in the event of a hazardous occurrence.

The quality of access roads to all inhabited areas should conform to or exceed the minimum standards to accommodate emergency equipment (fire trucks, ambulances, etc.). (See Appendix 11.)

2. Railroads -- Many railroad lines are located throughout Kern County. Some sections of these lines can be expected to be damaged during a major earthquake, fire, or flood. Alterations in alignments are not expected. The public health, safety, and general welfare would not appear to be endangered by temporary interruption of these services.
3. Airports -- The airports may be expected to be temporarily out of service during and after a major earthquake due to possible power failure or damage to runways and other facilities.

OPEN SPACE AND CONSERVATION ELEMENT

All hazard zones (geologic, fire, and flooding) relate significantly to the open space and conservation plan. This element will gain in importance as hazard zones are further delineated. Such information will be reflected in the Open Space and Conservation Element as revisions and updating take place.

RECREATION ELEMENT

The area set aside for recreation in Kern County will be affected by the restrictions recommended in the Safety Element; e.g., the use of off-road vehicles could be further limited throughout the wildland areas, and public areas may be restricted, especially during the fire season.

POLICY STATEMENTS

In order to minimize injuries, property damage, and loss of life or property, the following policies should be adopted by the County of Kern:

BUILDINGS FOR EMERGENCY SERVICES

That buildings and other structures indispensable to emergency services, including hospitals, law enforcement, fire, communication control stations, and other facilities of disaster control and refuge (i.e., schools) remain operational during any major disaster and be designed, located, and constructed accordingly.

EXISTING UNSAFE STRUCTURES

That there should be an awareness of the hazards that exist in many of the older structures in Kern County. To reduce the existing risks and thereby lower the total risk to life and property, there should be encouragement to rehabilitate substandard structures to meet the requirements set forth in adopted codes.

EMERGENCY PLAN

That the county continue to maintain and update the Kern County Emergency Plan, adopted by the Board of Supervisors on October 3, 1972.

HOME SAFETY PROGRAM

That the existing Home Safety Program of the Kern County Fire Department be continued to provide housing unit inspections and safety checks. For the present, this program could continue on the basis of individual requests for inspections, as it now exists.

DANGEROUS HOUSING ABATEMENT PROGRAM

That the Dangerous Housing Abatement Program be continued at least at its present level so that dangerous housing units may be eliminated or made safe for occupancy. This program should eventually include an inventory of all housing units with unsafe structural and/or nonstructural elements.

OPEN SPACE

That hazardous areas, identified as unsuitable for human occupancy, be guided toward open space use, such as agriculture, wildlife habitat, and limited recreation.

RESEARCH PROGRAMS

That the county government encourage public support of local, state, and federal research programs on geologic, fire, flood hazards, and other studies so that acceptable risk may be continually reevaluated and kept current with contemporary values.

IDENTIFICATION OF HAZARDOUS AREAS

That the county's program of identification, mapping, and evaluating the geologic, fire, and flood safety hazard areas, presently under way by various county departments, be continued.

ABANDONED OPEN MINE SHAFTS AND WELLS

That the county seek methods to eliminate hazards of abandoned open mine shafts and open wells pursuant to Section 24400 et seq. of the California Health and Safety Code. Any such program should be coordinated with involved state and federal agencies.

EXISTING METHODS OF ABATING HAZARDS

1. Uniform Building Codes, 1973 edition, including Uniform Mechanical Code, Uniform Housing Code, Uniform Code for the Abatement of Dangerous Buildings, Uniform Plumbing Code, Uniform Electrical Code, Regulations for Relocation of Buildings, and Regulations for Mobilehome and Accessory Structures.
2. Uniform Fire Code, 1973 edition.
3. Geologic Hazard Zones Act and Policies and Criteria of the California State Mining and Geology Board.
4. Use of Hazardous Zone classifications by the Kern County Planning Department.
5. Fire protection requirements of the Kern County Zoning Ordinance.
6. Dangerous Housing Abatement Program of the Kern County Health Department.
7. Home Safety Program of the Kern County Fire Department.
8. Weed Abatement Program and other fire prevention programs of the Kern County Fire Department. (See Appendix 16.)

IMPLEMENTATION RECOMMENDATIONS

1. A listing should be prepared and kept current, identifying all "critical facilities" and "critical structures" throughout the county. All "such facilities and structures" should then be reviewed for safety and, if necessary, be brought up to improved safety levels equal to that now required for schools and hospitals.*
2. A building strong-motion instrumentation program should be instituted for buildings over six stories in height with an aggregate floor area of 60,000 square feet or more and for every building over ten stories in height regardless of floor area.
3. An inspection program of unreinforced masonry structures should be initiated to determine whether such buildings create an unacceptable hazardous situation. Consideration should then be given for initiating condemnation proceedings against unreinforced masonry structures found to be unsafe.
4. An inspection program to identify dangerous structures should be initiated. Once a dangerous structures has been identified, enlargement thereto, except as necessary to make the structure safer, should not be permitted.
5. Techniques by which dynamic analysis of structures can be performed by computers have been developed. In the future, use of such techniques should be studied to determine whether these techniques could be incorporated in those portions of the county code regulating construction of large buildings.
6. Known geologic hazards within the area of a proposed subdivision should be so referenced on the final subdivision map.
7. All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisors action could involve the establishment of a land use activity susceptible to such hazards.
8. Chapter 70 of the Uniform Building Code (Grading) should require geological and soils engineering investigations in identified significant geologic hazard areas.

* A structure or facility is considered critical when one or both of the following criteria are met:

1. The failure of the structure would present a high degree of danger to a large number of people.
2. The failure of the structure would severely impair the ability of the community to respond in an emergency.

(See Appendix 23 for listing of types of critical structures and facilities.)

9. The fault zones designated on the maps in the Kern County Seismic Hazard Atlas as shaded areas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible, in accordance with state and county regulations.
10. The need for buffer zones to protect residential and recreational areas around Lake Isabella from possible seiches in the event of a major earthquake should be investigated.
11. The Safety Element should be reviewed by the County Planning Commission annually and should be comprehensively revised every five years, or whenever substantially new scientific evidence becomes available.
12. The "Fire Protection Regulations" should be removed from the Zoning Regulations, Section 7259.11, and placed under the Fire Protection Regulations, Sections 4000 to 4027, in the Kern County Ordinance Code.
13. The provision of an adequate water supply for fire fighting purposes, as specified presently in Section 7259.11 of the Zoning Ordinance, should be encouraged for all housing areas where an inadequate supply now exists.

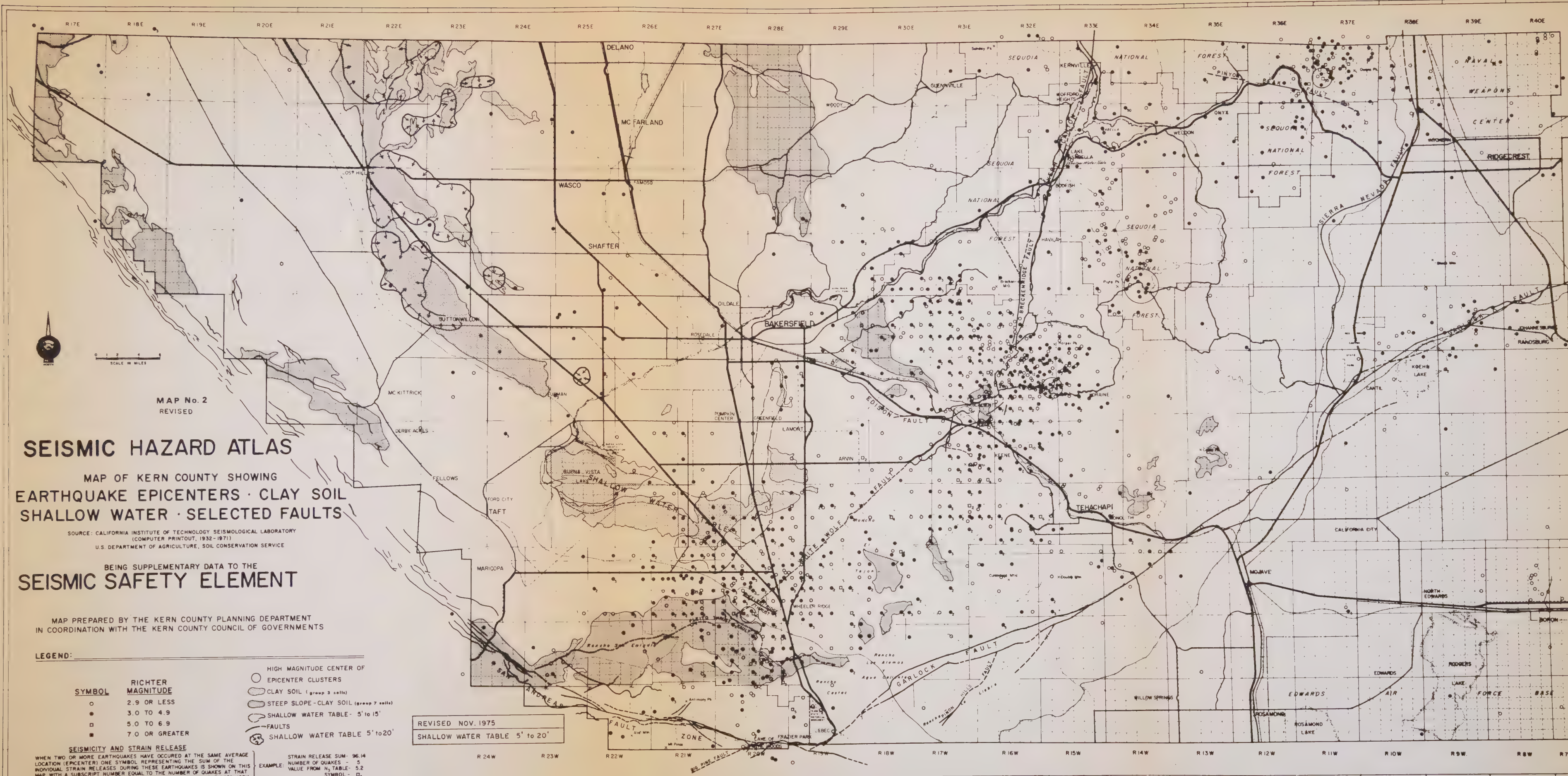
APPENDICES

Maps

1. Kern County Population Distribution - 1970
2. Kern County Earthquake Epicenters, Clay Soils, Shallow Water and Selected Faults
3. Kern County Hazardous Fire Area
4. Kern County Land Subsidence
5. Kern County Drainage Areas
6. Kern County Watersheds and Basins
7. Kern County Imported Water Resources
8. Kern County Areas of Agricultural Uses - 1970

Other Data

9. Kern County Ordinance No. G-1832 - Access ways for fire apparatus
10. Selected sections of the California Public Resources Code
11. Design Standards of the Kern County Fire Chief to be Enforced Within the Hazardous Fire Area During the Fire Season
12. Kern County Ordinance Code Section 7259.11
13. Amendment to the Fire Code Section 1.49H under Section 4016 of the Kern County Ordinance Code, and copy of the designation of the 1975 Hazardous Fire Area by the Kern County Fire Chief
14. Sections of the Kern County Ordinance Code on Unsafe Buildings, Condemnation, and the Kern County Dangerous Building Code
15. Selected sections from the Uniform Fire Code
16. Guidelines of the Kern County Weed Abatement Program (3-26-1975)
17. Table of Kern County Fire Causes, 1964 to 1974
Table of Kern County Fires by Type, 1964 to 1974
18. Illustrative River Cross-section of Flood Plains by Kern County Water Agency
19. Listing of published Flood Control Reports and of present and future studies by priorities - Kern County Water Agency
20. Listing of published Kern County Flood Control Reports by the U. S. Department of the Army, Corps of Engineers
21. Chart of Kern County Emergency Services Organization
22. Specific and Detailed Criteria Applying Within Special Studies Zones of the Geologic Hazard Zones Act
23. Classification of Critical Facilities
24. Bibliography



SEISMIC HAZARD ATLAS

MAP OF KERN COUNTY SHOWING
EARTHQUAKE EPICENTERS · CLAY SOIL
SHALLOW WATER · SELECTED FAULTS

SOURCE: CALIFORNIA INSTITUTE OF TECHNOLOGY SEISMOLOGICAL LABORATORY
(COMPUTER PRINTOUT, 1932-1971)
U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

BEING SUPPLEMENTARY DATA TO THE
SEISMIC SAFETY ELEMENT

MAP PREPARED BY THE KERN COUNTY PLANNING DEPARTMENT
IN COORDINATION WITH THE KERN COUNTY COUNCIL OF GOVERNMENTS

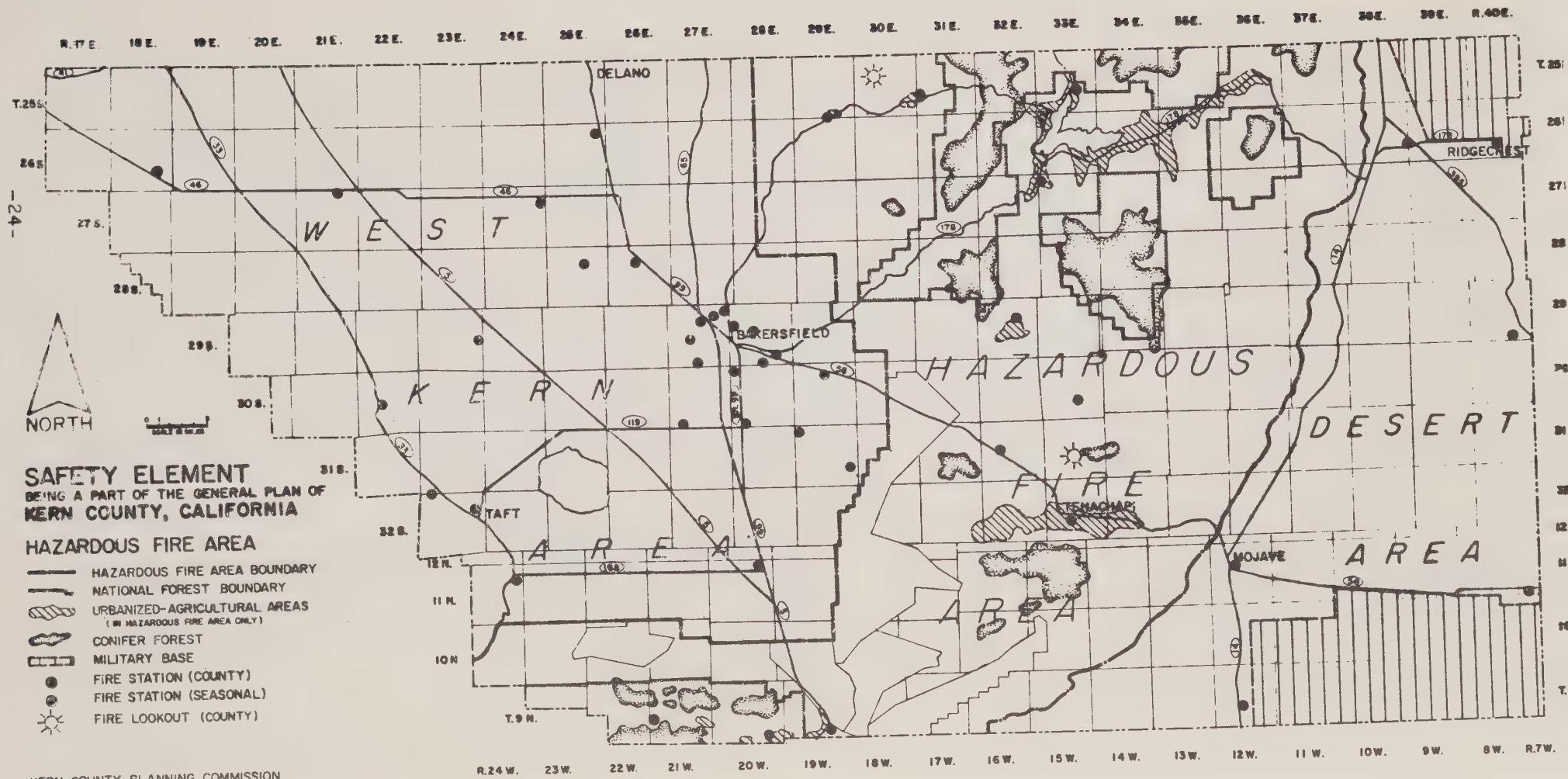
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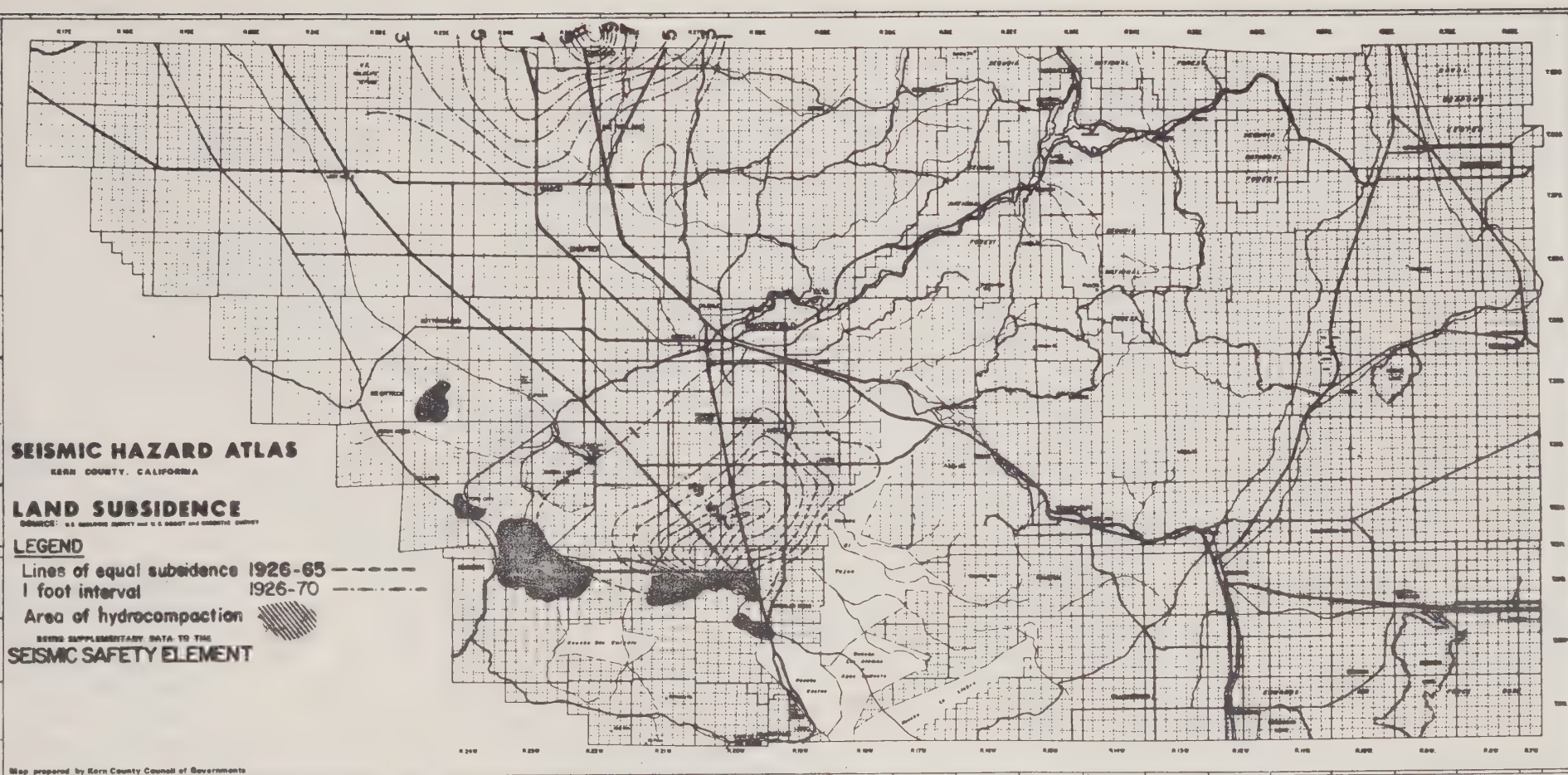
- | | | |
|---------------|--------------------------|--|
| SYMBOL | RICHTER MAGNITUDE | HIGH MAGNITUDE CENTER OF EPICENTER CLUSTERS |
| ○ | 2.9 OR LESS | ○ CLAY SOIL (group 3 cells) |
| ● | 3.0 TO 4.9 | ▨ STEEP SLOPE-CLAY SOIL (group 7 cells) |
| ■ | 5.0 TO 6.9 | ▨ SHALLOW WATER TABLE- 5' to 15' |
| ■ | 7.0 OR GREATER | — FAULTS |
| | | ⊗ SHALLOW WATER TABLE 5' to 20' |

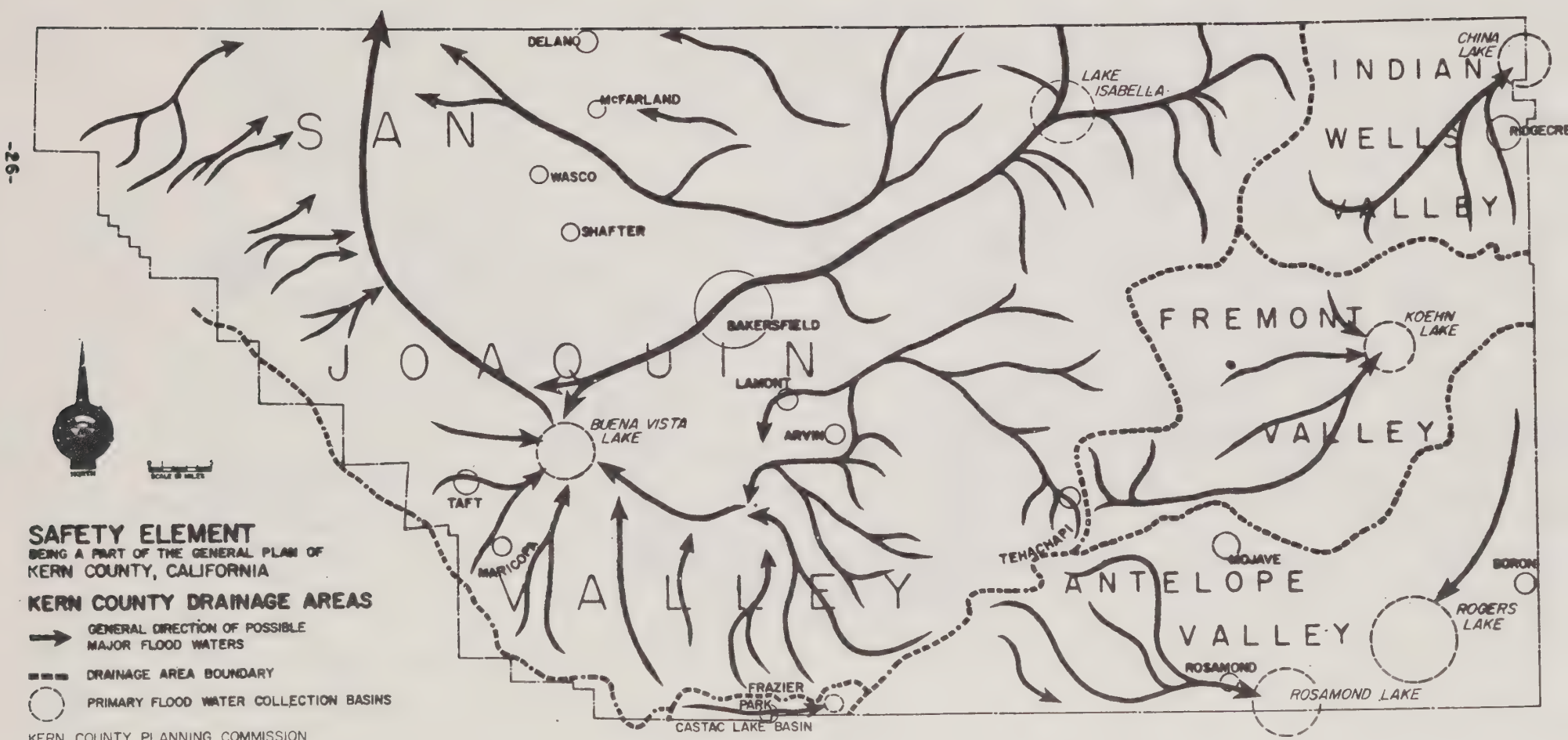
SEISMICITY AND STRAIN RELEASE
WHEN TWO OR MORE EARTHQUAKES HAVE OCCURRED AT THE SAME AVERAGE LOCATION (EPICENTER) ONE SYMBOL REPRESENTING THE SUM OF THE INDIVIDUAL STRAIN RELEASES DURING THESE EARTHQUAKES IS SHOWN ON THIS MAP WITH A SUBSCRIPT NUMBER EQUAL TO THE NUMBER OF QUAKES AT THAT LOCATION DURING THE YEARS FOR WHICH THE DATA ARE AVAILABLE (1932-1971).

STRAIN RELEASE SUM- 96.14
NUMBER OF QUAKES - 5
EXAMPLE: VALUE FROM N₅ TABLE- 5.2
SYMBOL - D₅

REVISED NOV. 1975
SHALLOW WATER TABLE 5' to 20'

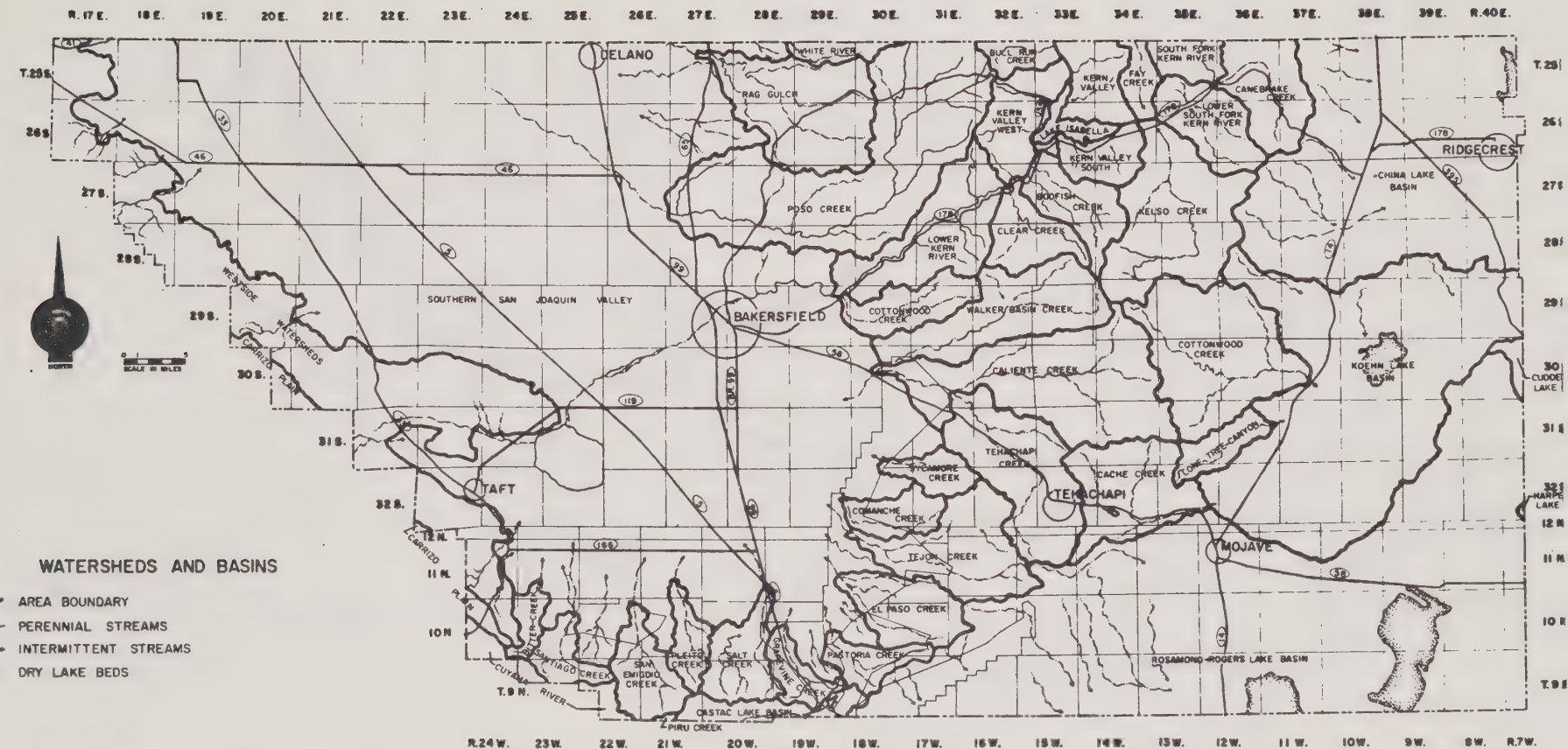


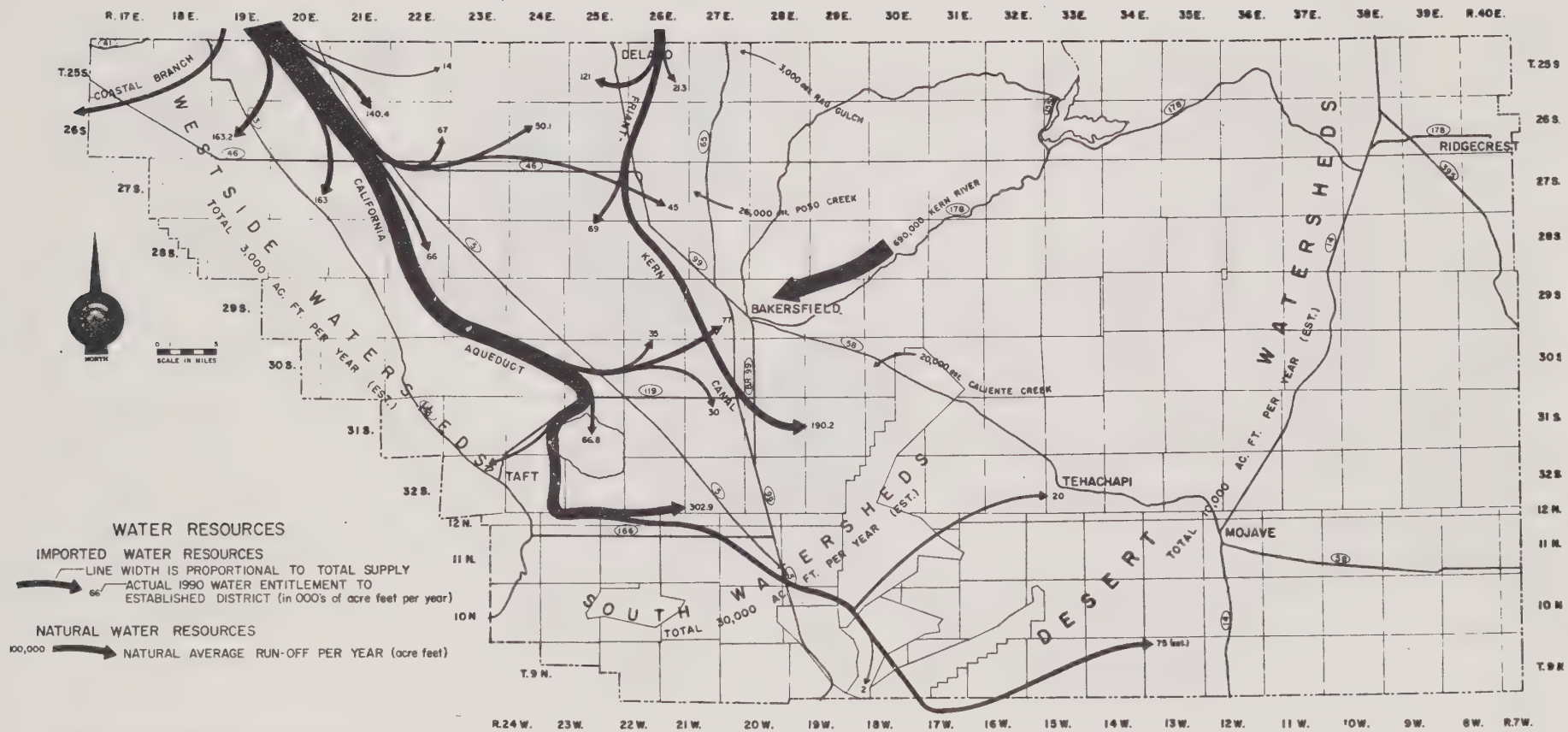


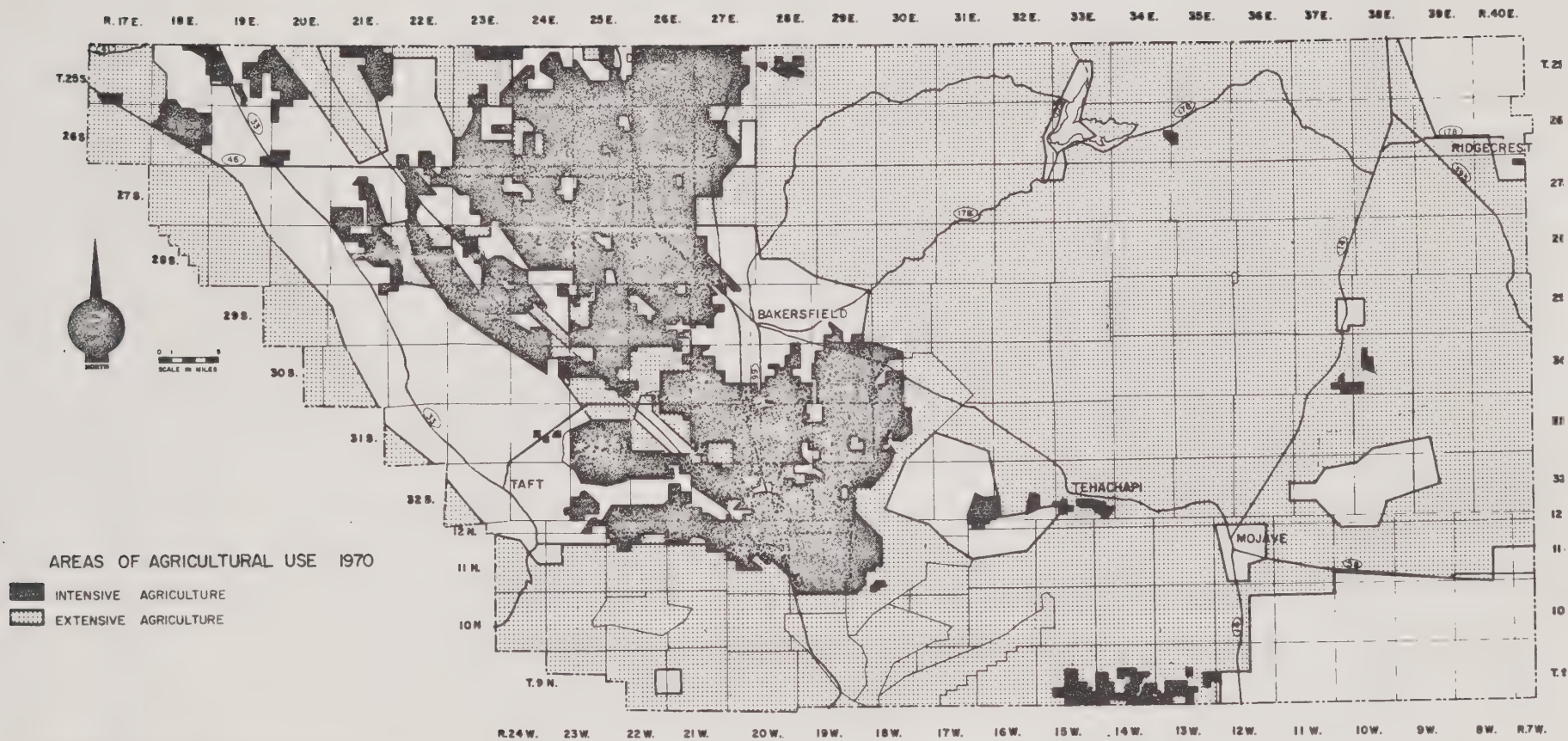


SAFETY ELEMENT
 BEING A PART OF THE GENERAL PLAN OF
 KERN COUNTY, CALIFORNIA
KERN COUNTY DRAINAGE AREAS

- GENERAL DIRECTION OF POSSIBLE MAJOR FLOOD WATERS
- DRAINAGE AREA BOUNDARY
- PRIMARY FLOOD WATER COLLECTION BASINS







APPENDIX 9

ORDINANCE NO. G-1832

Section 2. Section 13.28 of the Uniform Fire Code, May, 1967 Edition, as adopted and amended by Sections 4015 and 4016, respectively, in Division 1 of Part 4 of the Ordinance Code of the County of Kern, is hereby amended to read as follows:

Section 13.28. ACCESS WAYS FOR FIRE APPARATUS.

a. All premises on which any building as defined in the Kern County Building Code is hereafter constructed and located, and all premises on which any mobilehome as defined by Section 18211 of the Health and Safety Code is hereafter located, and each such building and each such mobilehome, shall be provided with an access way in accordance with this section.

b. Such access way shall be established, constructed, and maintained in such manner as will allow the use thereof at all times for direct access to such building or mobilehome by County fire fighting apparatus, without any physical obstruction or legal hindrance, all as determined by the Fire Chief in the exercise of his reasonable discretion.

c. The minimum travel way width and horizontal clearance of such access way shall be not less than 20 feet if it serves more than one parcel of land, or 12 feet if it serves only one parcel of land.

d. The minimum vertical clearance of such access way shall be not less than 15 feet measured from all points on the surface of the required minimum travel way width.

e. The grade of such access way shall not exceed 15%.

f. In case the site of such building or mobilehome is found by the Fire Chief, in the exercise of his reasonable discretion, to be not more than 150 feet distance from a public street or public road measured over a course and terrain which can be speedily traversed by firemen with all necessary hoses and other nonvehicular fire fighting equipment, the Fire Chief may except the same from the requirements of this section or modify the requirements of this section.

g. The Fire Chief shall have discretion to modify the requirements of this section in those cases where the site of such building or mobilehome is provided with auxiliary means of access or fire protection facilities approved by him.

Section 3. DECLARATION OF URGENCY. This ordinance is hereby declared to be an urgency measure for the immediate preservation and protection of the public safety, health and welfare, and shall take effect immediately. The facts constituting the necessity for adoption of this ordinance as an urgency measure are as follows: All buildings and mobilehomes within the County are in need of adequate access ways for the use of County fire apparatus for the protection of life, limb, and property. Many parts of the County are now being developed and built upon where the terrain requires special consideration with respect to adequate access for fire protection purposes. There is an immediate need for clarification and improvement of the requirements relating to access ways for fire apparatus for the aforementioned objects.

May 18

APPENDIX 10

SELECTED SECTIONS OF THE CALIFORNIA PUBLIC RESOURCES CODE

Public Resources Code 4291: Any person who owns, leases, controls, operates, or maintains any building or structure in, upon, or adjoining any mountainous area or forest-, brush-, or grass-covered lands or land covered with flammable material shall at all times do all of the following:

- (a) Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side thereof or to the property line, whichever is nearer, all flammable vegetation or

other combustible growth. This subdivision does not apply to single specimens of trees, ornamental shrubbery, or similar plants which are used as ground cover, provided that they do not form a means of rapidly transmitting fire from the native growth to any building or structure.

- (b) Maintain around and adjacent to any such building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth which is located from 30 feet to 100 feet from such building or structure or to the property line, whichever is nearer, as may be required by the State Forester when he finds that because of extra hazardous conditions a firebreak of only 30 feet around such building or structure is not sufficient to provide reasonable fire safety. Grass or other vegetation located more than 30 feet from such building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.
- (c) Remove that portion of any tree which extends within 10 feet of the outlet of any chimney or stovepipe.
- (d) Maintain any tree adjacent to or overhanging any building free of dead or dying wood.
- (e) Maintain the roof of any structure free of leaves, needles, or other dead vegetative growth.
- (f) Every chimney or stovepipe that is attached to any fireplace, stove, or other device that burns any solid or liquid fuel shall be provided and maintained at all times with a screen over the outlet. Such screen shall be constructed of nonflammable material with openings of not more than one-half inch in size.

Public Resources Code Sections 4427 and 4431:

Equipment: During any time of the year when burning permits are required in an area pursuant to this article, no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, which is located on or near any forest-covered land, brush-covered land, or grass-covered land, without doing both of the following:

- (a) First clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet.
- (b) Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

This section does not apply to portable powersaws and other portable tools powered by a gasoline-fueled internal combustion engine. (PRC 4427.)

During any time of the year when burning permits are required in an area pursuant to this article, no person shall use or operate or cause to be operated in such area any portable saw, auger, drill, tamper, or other portable tool powered by a gasoline-fueled internal-combustion engine on or near any forest-covered land, brush-covered land, or grass-covered land, within 25 feet from any flammable material, without providing and maintaining at the immediate locations of use or operation of said saw or tool, for fire fighting purposes, one serviceable round point shovel, with an overall length of not less than forty-six (46) inches, or one serviceable fire extinguisher. The State Forester shall by administrative regulation specify the type and size of fire extinguisher necessary to provide at least minimum assurance of controlling fire caused by use of portable power tools under various climatic and fuel conditions.

The required fire tools shall at no time be farther from the point of operation of the powersaw or tool than 25 feet with unrestricted access for the operator from the point of operation. (PRC 4431.)

APPENDIX 11

DESIGN STANDARDS OF THE KERN COUNTY FIRE CHIEF TO BE ENFORCED WITHIN THE HAZARDOUS FIRE AREA DURING THE FIRE SEASON

Fuel Breaks and Fire Breaks:

Fuel breaks and/or fire breaks separating communities or clusters of structures from the native vegetation may be required. Such fuel breaks may be "greenbelts," as all vegetation need not be removed but thinned or landscaped to reduce the volume of fuel. All fuel and fire breaks shall meet the minimum design standards of the Fire Chief:

1. A fuel break consists of a treated area one hundred feet (100') in width, and the following shall be done:
 - a. Fall and remove all standing defective or dead trees (snags).
 - b. Remove all brush, slash, and woody ground fuel.
 - c. Remove or thin all thickets of green oak where trees are under four inches (4") in diameter or under twelve feet (12') in height.
 - d. Prune living and dead limbs from live standing trees to a height of eight feet.
 - e. Pine needles, grass, and other light ground fuels need not be cleared from the fuel break.
 - f. Fire breaks may be required within a fuel break.
2. A fire break shall consist of a strip, a minimum of ten feet (10') in width, cleared to mineral soil on each side of a road, or a width determined by the Fire Chief to be adequate for the general terrain and type of ground cover.
 - a. Fire breaks are not to be used as roads, parking areas, or storage areas.
3. All easements for fuel breaks and/or fire breaks for fire safety of built-up areas shall encompass access for fire-fighting personnel and equipment, which may mean motorized travel in some cases; such easements shall be dedicated for this specific purpose to entity comprised of the property owners. The property owners shall be charged with the maintenance of such easements.

APPENDIX 12

KERN COUNTY ORDINANCE CODE SECTION 7259.11

Fire Protection Requirements. The provisions of this Section shall not be construed to apply to one single-family dwelling on an existing parcel. Access in commercial, industrial, or other zones may require paving to match the grade of the rails where railroad loading is planned.

Right-of-way dedication of thirty (30) feet in width for alley purposes shall be provided at the rear of proposed industrial or commercial properties to meet the requirements of the Kern County Fire Chief. Sufficient data shall be provided by the applicant to permit establishment of an alley grade as a basis for present or future construction. Such data shall be submitted to the office of the Road Commissioner for review and establishment of grade lines. After study of the data submitted, the Director of Public Works and the Road Commissioner will determine whether or not alley construction will be required at the time development of the property takes place. Proposed finished grade elevations of any buildings, parking areas, or other types of development shall

be compatible with the established alley grades. Such compatibility shall be determined by the Building Inspection Department during the plan check. All alley construction shall be to County Standards. If construction is deferred to a future time, a cash bond shall be posted with the Road Commissioner for deposit in the road fund. The bond amount shall be determined by the Road Commissioner and shall be sufficient to permit alley construction for the site proposed for development. Such bond amounts shall be held until sufficient properties are developed to warrant construction of the alley, at which time the County will proceed with construction of the alley. All such areas shall be kept free and clear of obstructions, and no fences or walls will be permitted on or across any part of the area offered for dedication. Where two (2) alleys intersect, twenty-foot (20') corner cutoffs or a minimum twenty-foot (20') radius return shall be provided.

Notwithstanding any of the above provisions, when a site is proposed for development in such a manner as to insure adequate ingress and egress for emergency vehicles and other types of heavy vehicles, or when the construction of an alley at the rear of the property is not feasible because of natural or artificial topographic features, the above requirements may be waived.

The fire flow requirements shall be determined by the Fire Chief and shall be computed on the basis of a minimum 20 p.s.i.g. residual operating pressure at the lowest pressure point of the street main from which the flow is measured. The Fire Chief shall be guided by the minimum requirements set forth in the following table, but may require higher standards on the basis of local conditions, exposure, congestion, and construction of buildings. The following flows are to be provided in addition to the domestic requirements:

District Classification	Minimum Fire Flow	Minimum Duration (in hours)	Maximum Hydrant Spacing
Residential	500 GPM	1	660'
1-, 2-, and 3-family, and up to 2 acres of isolated commercial included in a predominately residential area and having no buildings over 5,000 square feet in area and 2 stories in height			
Commercial	1,000 GPM	2	330'
Include: all commercial uses, hotels, apartments, multiple-residence buildings, dormitories, schools, and collages			
Industrial	1,500 GPM	4	330'

All water mains serving hydrants shall have a minimum nominal diameter of six inches (6").

Stub lines over 800 feet in length or supporting more than one hydrant shall be eight inches (8") or larger except where it can be shown that adequate flow can be provided with six-inch (6") lines.

"Dry barrel" type fire hydrants shall be provided at all elevations above 2,000 feet.

A hydrant shall be placed at each intersection except where this would provide excessive hydrant coverage.

Fire hydrant spacing shall be computed separately for each side of major highways, canals, or railways.

The last hydrant on a cul-de-sac or stub street shall not be more than one-half the maximum spacing from the end of the street.

The spacing of hydrants shall have an individual tolerance of 10 percent. However, the average spacing between any three (3) adjacent hydrants shall not exceed the required spacing.

The system shall be provided with valves and other facilities, such as tanks, so that no point on any lot at the street right-of-way shall be more than one and one-half (1 1/2) times the maximum hydrant spacing from a working hydrant as a result of any single break or shutdown for repairs, except where impractical.

APPENDIX 13

Under Section 4016 of the Kern County Ordinance Code, the following amendment was adopted to the Uniform Fire Code, Section 1.49H, establishing a Kern County Hazardous Fire Area.

Section 1.49H. HAZARDOUS FIRE AREA is amended to read as follows: HAZARDOUS FIRE AREA shall mean any land which is covered with grass, grain, brush or forest, whether privately or publicly owned, which is so situated or is of such inaccessible location that a fire originating upon such land would present an abnormally difficult job of suppression or would result in great or unusual damage through fire or resulting erosion.

The Chief shall officially determine and publicly announce the creation of each Hazardous Fire Area, and shall declare the period during which the area shall be so designated. Notice of the creation of each Hazardous Fire Area shall be given by posting of notices at intervals of not greater than one (1) mile along the exterior boundaries of such area or along roads and trails passing through such area, and by publishing once a week for two weeks such notice setting forth the area affected in general terms in a newspaper of general circulation and printed and published in the County of Kern.

Section 3. Except as provided in this Ordinance, no persons shall smoke or build a campfire or bonfire within a HAZARDOUS FIRE AREA. The County Fire Warden may establish camp grounds or camp sites within such area where smoking and the building of campfires may be allowed, but no such camp ground or camp site may be established without the consent of the owner, or his authorized agent, of the land upon which it is located.

Section 4. Except at the places or during the period designated by regulations set up under authority of the United States Forest Service or United States Department of Agriculture, no person shall smoke or build a campfire upon any forest land without written permit by the County Fire Warden or the District Forest Ranger or without possession of fire fighting tools required by such permit.

Section 5. Every person, firm, or corporation owning, leasing, occupying or operating any camp, camp site, cabin, house, apiary, building, or other structure within the boundaries of any HAZARDOUS FIRE AREA shall maintain an effective fire break around such camp, buildings, or structures, such fire break to be made by removing all dead grass, bear clover, leaves, and litter to the mineral earth a distance of ten (10) feet, and clearing out inflammable brush a distance of thirty (30) feet from the surface of such camp, building or structure, and shall keep clean at all times the roofs of such buildings or structures of needles, leaves, twigs or similar inflammable material.

Section 6. All chimneys and fireplaces in such HAZARDOUS FIRE AREA shall be constructed in a safe and workman like manner; shall be thoroughly insulated and adequately supported; shall project at least three (3) feet above the roof of the building; and shall be equipped at all times with a spark arrestor with openings of not more than one-fourth (1/4) inch in diameter. No chimney or fireplace shall be put in use until inspected and approved in writing by the County Fire Warden or his duly authorized agent.

Section 7. Any violation of this Ordinance shall constitute a fire hazard and shall be subject to the provisions of law appertaining to the abatement of such fire hazard.

Section 8. Every person violating or failing or neglecting or refusing to comply with any of the provisions of this Ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding the sum of Five Hundred Dollars, or by imprisonment for not more than one hundred eighty days, or by both such fine and imprisonment: and each such person shall be deemed guilty of a separate offense for each day during any portion of which the violation of, or failure, neglect or refusal to comply with any of the provisions of this Ordinance is committed, continued or permitted by such person.

Section 9. All ordinances, or parts of ordinances, in conflict herewith, are hereby repealed.

Section 10. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the remaining portion of this Ordinance.

Pursuant to Division 1, Chapter 2, Part 4 of the Ordinance Code of Kern County, the Chief of the Kern County Fire Department designates the following-defined area as a "Hazardous Fire Area" and declares such area to be a "Hazardous Fire Area" from April 15, 1975, to December 1, 1975:

All of those lands classified as state responsibility areas for fire protection pursuant to Sections 4125, 4126, 4127, and 4128 of the Public Resources Code of the State of California.

A map showing this designated area is on file at the Kern County Fire Department office at 1025 Golden State Avenue, Bakersfield, California 93301.

R. W. Lechtreck, Chief of the
Kern County Fire Department

NOTICE OF HAZARDOUS FIRE AREA

Pursuant to Division 1, Chapter 2, Part 4 of the Ordinance Code of Kern County, the Chief of the Kern County Fire Department designates the following-defined area as a "Hazardous Fire Area" and declares such area to be a "Hazardous Fire Area" from April 15, 1975, to December 1, 1975:

Beginning at the intersection of the west boundary line of Section 20, Township 10 North, Range 24 West, SBB&M, with the center line of the Maricopa-Santa Maria Highway, being a point on the west boundary line of Kern County, and running thence north-easterly and along said center line to intersect the north boundary line of said township; thence east along section lines 17 1/2 miles, more or less, to the north-east corner of Section 4, Township 10 North, Range 21 West, SBB&M; thence south 2 miles; thence east 3 miles to the southeast corner of Section 12 of last-named township; thence south to the southwest corner of Section 7, Township 10 North, Range 20 West, SBB&M; thence east along section lines 11 1/2 miles, more or less, to the west boundary line of Rancho El Tejon; thence in a general northeasterly direction and along the west boundary line of Rancho El Tejon to the southeast corner of the northeast quarter of Section 9, Township 30 South, Range 30 East, MDB&M; thence north along section lines 2 1/2 miles to the northeast corner of Section 33,

Township 29 South, Range 30 East, MDB&M; thence west 3 miles to the northwest corner of Section 31 of last-named township; thence north along section lines 3 miles to the northeast corner of Section 13, Township 29 South, Range 29 East, MDB&M; thence west 2 miles; thence north 2 miles to the northwest corner of Section 2, of the last-named township; thence east one-half mile, more or less, to the southeast corner of Section 34, Township 28 South, Range 29 East, MDB&M; thence north along section lines 5 miles to the northeast corner of Section 10 of last-named township; thence west along section lines 8 miles to the southwest corner of Section 4, Township 28 South, Range 28 East, MDB&M; thence north along section lines 19 miles to the northwest corner of Section 4, Township 25 South, Range 28 East, MDB&M, being a point on the north boundary line of Kern County; thence east and along said north boundary line 60 miles, more or less, to the center line of the Los Angeles Aqueduct; thence in a general southwesterly direction and along the last-named center line to intersect the south boundary line of Kern County; thence westerly and northerly and along the boundary line of Kern County to the place of beginning; excepting therefrom all of those lands lying within the corporate limits of the city of Tehachapi.
Dated this 18th day of March, 1975.

R. W. Lehtreck, Chief of the
Kern County Fire Department

APPENDIX 14

ORDINANCE CODE OF KERN COUNTY

CHAPTER 3. UNSAFE BUILDINGS - CONDEMNATION

Section 4025. Public Nuisance. Any building, structure, or portion thereof, including buildings or structures in the process of erection, found to be dangerous to persons or property, unsafe for the purpose for which constructed, or due to damage caused by fire, the elements, sabotage, explosions or other means, shall constitute a public nuisance and subject to abatement, as such.

Section 4026. Power to Condemn. Except in cases of emergency for the immediate preservation of life and property, before any action is taken to abate any public nuisance as defined in Section 4025 hereof, such building or structures shall be inspected by the Building Inspections Department of Kern County and approval given for such abatement. In the event that the Director of the Building Inspections Department determines that such building constitutes a public nuisance, it shall be forthwith condemned and shall not be occupied or used until made safe, and its use authorized by said Building Inspections Department.

Section 4027. Penalty for Violation. Use or occupation of a building in violation of the foregoing sections shall constitute a misdemeanor.

Section 4. (a) No action or proceedings commenced, and no rights accrued, before this ordinance takes effect is affected by the provisions of this ordinance.

(b) Neither the adoption of this ordinance nor repeal thereby of any prior ordinance or code provision of the County of Kern shall in any manner be deemed to affect:

(1) Any prosecution or proceedings for violation of any provisions of such prior ordinance or code provision; or

(2) Any rights or obligations growing out of any permit issued under such prior ordinance or code provisions and which permit is valid and unexpired as of the effective date of this ordinance, provided however that the Chief of the Fire Department shall have authority to grant reasonable extensions of such valid and unexpired permits; or

(3) Any rights or obligations growing out of any security deposit or surety bond furnished under such prior ordinance or code provisions, or any suit or proceedings for the enforcement of such rights or obligations.

Section 5. The headings of the sections or paragraphs of those portions of the Ordinance Code hereby adopted shall not be deemed to govern, limit or modify or in any manner affect the scope, meaning or intent thereof.

Article 5. Kern County Dangerous Buildings Code.

Section 4305. SHORT TITLE. This Article may be cited as the "Kern County Dangerous Building Code."

Section 4306. ADOPTION OF UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS. The Uniform Code for the Abatement of Dangerous Buildings, 1973 Edition (sponsored and copyrighted by the International Conference of Building Officials), as modified and amended in this Article, is adopted by reference into the Kern County Dangerous Buildings Code.

Section 4307. MODIFICATION OF THE UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS. The following sections are not adopted by reference as part of the Uniform Code for the Abatement of Dangerous Buildings, 1973 Edition:

Section 204, Board of Appeals.

Section 302, Paragraph No. 14.

Section 4308. AMENDMENTS TO THE UNIFORM CODE FOR THE ABATEMENT OF DANGEROUS BUILDINGS. The following sections of the Uniform Code for the Abatement of Dangerous Buildings, 1973 Edition, are adopted by reference as amended herein:

(a) Section 102(b) is amended to read as follows:

"Section 102(b). Scope. The provisions of this Code shall apply to all dangerous buildings, as herein defined, which are now in existence or which may hereafter be constructed in this county with the following exception:

"Exception: Dangerous residential buildings used, designed, or intended to be used for human habitation shall be abated under provisions of the Kern County Housing Code administered by the County Health Officer."

(b) Section 201(a) is amended to read as follows:

"Section 201(a). Administration. The Building Official is hereby authorized to enforce the provisions of this Code with the following exception:

"Exception: This Code shall not be applicable to any residential buildings used, designed or intended to be used for human habitation, and which are subject to abatement under the Kern County Housing Code administered by the County Health Officer."

APPENDIX 15

Selected Sections from Uniform Fire Code

Section 13.25. VACATING PREMISES.

Upon vacating or abandoning any premises, the occupant thereof shall remove any and all noxious and hazardous material or waste matter which has been deposited, allowed to come to rest, or permitted to accumulate thereon, and such premises shall be left in a clean and neat condition.

Section 13.26. VACANT BUILDINGS.

Every person owning, or in charge or control of, any vacant building shall remove therefrom all accumulations of flammable or combustible waste or rubbish and shall securely lock, barricade, or otherwise secure all doors, windows and other openings thereof.

Section 13.27. UNSAFE BUILDINGS.

All buildings or structures which constitute a fire hazard or are otherwise dangerous to human life by reason of inadequate maintenance, dilapidation, obsolescence, or abandonment, are for the purpose of this section declared to be unsafe buildings. Such buildings are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition, or removal in accordance with the procedures specified in the Uniform Building Code, Section 203.

APPENDIX 16

KERN COUNTY FIRE DEPARTMENT

STANDARD OPERATIONAL PROCEDURE #14A

DATE: March 26, 1975

**SUBJECT: FIRE PREVENTION
Hazard Reduction Guidelines (Weeds)**

In order to develop a uniform program of weed eradication, the following guidelines will be followed. These guidelines will supersede any previous verbal or written orders pertaining to those items herein and will remain in force until changed by written instructions.

I. In Area Owner.

A. Initial Contact.

1. A "Notice of Violation" will be issued on first contact when a fire hazard is encountered or is likely to occur. EXAMPLE: Green vegetation will become a hazard when dried.
2. All "Notice of Violations" shall indicate compliance within fourteen (14) days. A shorter compliance period may be indicated if a serious hazard exists and should be immediately abated.

B. Noncompliance.

1. A "Notice to Appear" (citation) will be issued for noncompliance of violation notice.
 - a. Make sure that the citation is filled out completely including the local justice court in which the violation occurred.
 - b. Violator must sign citation. If the violator refuses to produce proper identification or sign the "Notice to Appear," contact Control One and request a Sheriff's Deputy be dispatched to the scene.
2. Disposition of Court Hearing.
 - a. Fire Prevention Bureau will contact the Bakersfield Municipal Courts for disposition of court hearing on all citations written on that court.
 - b. It is the responsibility of the issuing station to advise the Fire Prevention Bureau of court hearing dispositions in all other courts.

Disposition information may be obtained by the calling the court the day after the date of promise to appear.

II. Absentee Owner Living Within Kern County.

A. Initial Contact.

1. "Notice of Violation" will be issued on first contact when a fire hazard is encountered or is likely to occur. EXAMPLE: Green vegetation will become a hazard when dried.
2. All "Notice of Violations" shall indicate compliance within fourteen (14) days. A shorter compliance period may be indicated if a serious hazard exists and should be immediately abated.
3. All "Notice of Violations" mailed to absentee owners will be sent by regular mail with a letter (KCFD #95) to the property owner.

B. Noncompliance.

1. A "Notice to Appear" (citation) will be issued for the violation.
 - a. Fill out the citation as completely as possible, sign as issuing officer, and forward by mail to the station in whose area the violator resides. The station receiving the citation will have it signed by the violator and will return all but the violator's copy to the original station.
 - b. Original station distribute copies as per SOP #14.
 - c. If the violator fails to sign the citation, send all information to the F. P. B. A warrant will be obtained for the violator's arrest.
2. Disposition of Court Hearing.
 - a. Fire Prevention Bureau will contact the Bakersfield Municipal Courts for disposition of court hearing on all citations written on that court.
 - b. It is the responsibility of the issuing station to advise the Fire Prevention Bureau of court hearing dispositions in all other courts. Disposition information may be obtained by calling the court the day after the date of promise to appear.
 - c. Fire Prevention Bureau will keep records of all court hearing dispositions.
3. If the hazard cannot be abated through court action after step II. B. 1. c., follow procedures in III B. - Noncompliance.

III. Absentee Owner Living Out of Kern County.

A. Initial Contact.

1. A "Notice of Violation" will be issued on first contact when a fire hazard is encountered or is likely to occur. EXAMPLE: Green vegetation will become a hazard when dried.
2. All "Notice of Violations" shall indicate compliance within fourteen (14) days. A shorter compliance period may be indicated if a serious hazard exists and should be immediately abated.
3. All "Notice of Violations" mailed to absentee owners will be sent by regular mail with a letter (KCFD #95) to the property owner.

B. Noncompliance.

1. Post lot with "Notice to Abate."

2. If seven (7) days pass with noncompliance, send all pertinent information regarding location etc. to the Fire Prevention Bureau.
3. The Fire Prevention Bureau will have the lot cleaned and the bill added to the property tax when provided by law.

IV. Owner Unknown.

- A. Send all information to the Fire Prevention Bureau via memo. The Fire Prevention Bureau will look up the owner on last tax roll and advise the station by memo. Then follow the appropriate steps as outlined previously to get the hazard abated.

V. Authority to Act.

A. Enforcement Codes and Ordinances.

1. Definition of hazard: Any accumulation of weeds, grass, or vegetation which when fired may endanger or injure lives, property or improvements.
2. Contract Cities - Code.
 - a. Arvin - Uniform Fire Code
 - b. Maricopa - Uniform Fire Code
 - c. McFarland - Uniform Fire Code
 - d. Tehachapi - Uniform Fire Code
 - e. Ridgecrest - None
3. Unincorporated Areas.
 - a. Use Kern County Ordinance G-1733.*
4. Fuel Break Width and Placement.
 - a. Width of fuel clearance will be at the discretion of the person issuing the Notice of Violation.
 - b. It should be kept in mind that we are trying to protect improvements. Circumstances will dictate the width of clearance and fuel removal methods.

* Kern County Ordinance G-1733, which took effect November 23, 1972, includes Section 3445, as follows:

Section 3445. Weeds. It shall be the duty of every owner, manager, or person in charge of or control of any residential unit, multiple dwelling unit, hotel, motel, business, or vacant lot in the urbanized portion of the unincorporated part of the County to maintain his premises free of excessive accumulations of any weeds which may endanger or injure neighboring property or by the nature of such growth may create fire, health, or safety hazards for property or persons. Such excessive accumulations of weeds are declared a public nuisance and may be abated as provided in this Chapter.

APPENDIX 17
KERN COUNTY FIRE CAUSES

Cause	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1974 in %
Cooking Equipment) Heating Equipment)	150	60 110	74 98	62 108	69 90	77 126	106 115	61 81	117 96	109 108	96 73	2.3 1.7
Wiring	179	177	73	211	152	277	132	153	181	193	182	4.3
Machine/Equipment Use	561	609	608	579	697	715	793	862	942	1013	1295	30.4
Children/Matches	227	344	290	297	335	429	396	400	350	502	556	13.1
Debris burning	250	388	355	336	432	547	394	162	214	204	176	4.1
Fire Works	17	14	13	20	24	50	11	27	8	27	34	.8
Incendiary	83	100	107	109	144	376	203	203	218	434	446	10.5*
Smokers.	443	510	557	493	623	711	579	513	466	628	602	14.1
Lightning	6	32	23	63	5	31	24	19	46	50	58	1.4
Others	279	285	361	254	352	223	471	625	406	790	741	17.4
Totals	2195	2629	2559	2532	2923	3562	3224	3106	3044	4058	4259	100.0

KERN COUNTY FIRES BY TYPE

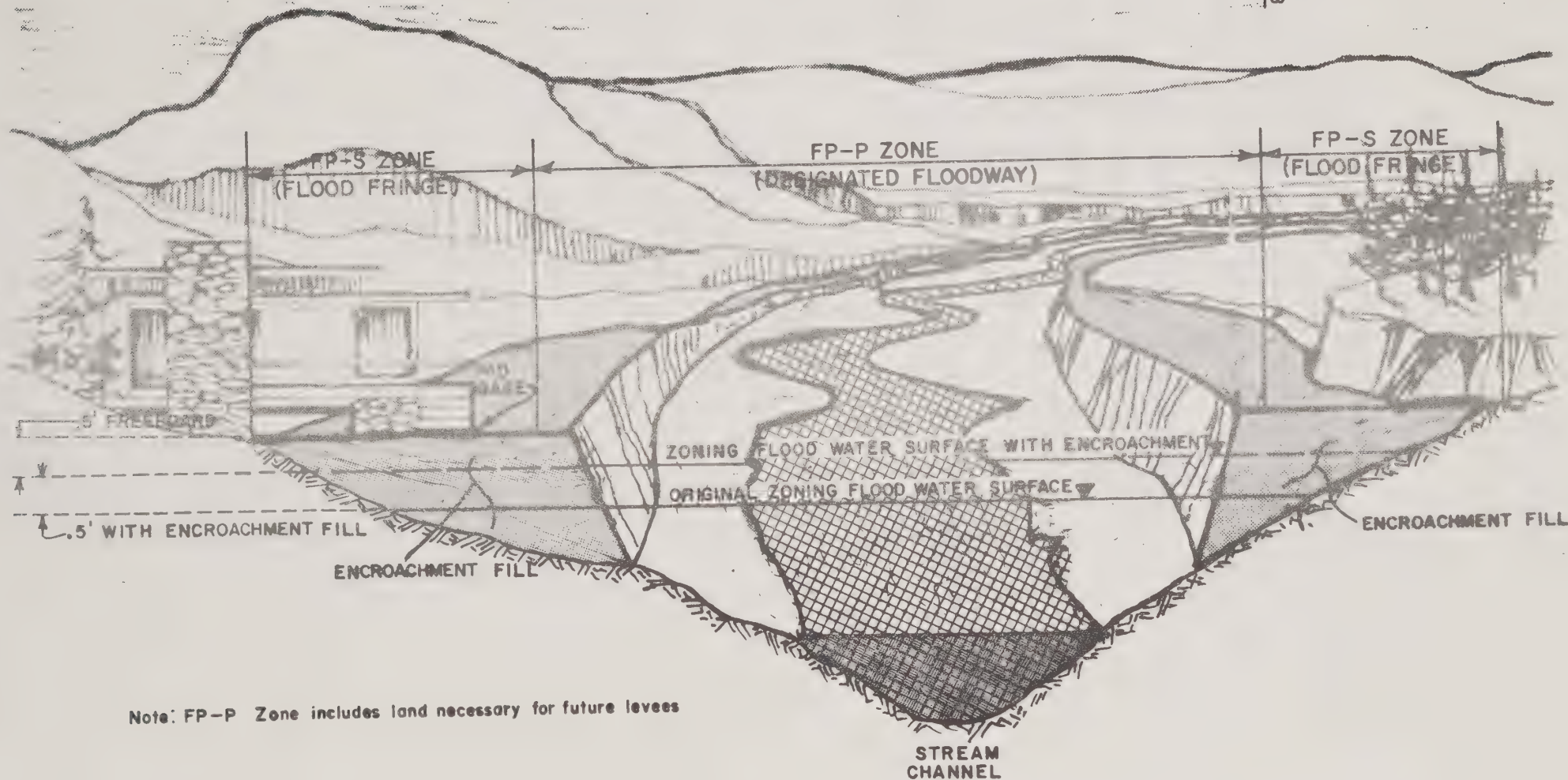
Type	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1974 in %
Structure	588	589	480	675	554	607	628	703	873	787	882	20.7
Industrial	27	15	4	15	13	6	12	18	19	32	58	1.4
Petroleum	26	22	9	15	12	11	6	7	3	8	12	.3
Cotton	70	45	24	27	29	25	42	40	53	45	96	2.3
Vehicle	667	591	662	703	708	730	793	871	926	964	1005	23.6
Range	360	719	682	766	877	1304	859	665	417	1326	1249	29.3
Grain	6	8	9	17	14	8	16	4	3	23	12	.3
Other	451	640	689	724	716	871	868	798	750	873	945	22.2
Total	2195	2629	2559	2942	2923	3562	3224	3106	3044	4058	4259	100.0
False Alarms	252	316	290	327	344	483	467	489	557	646	682	
% of Total Fires	11.5	12.0	11.3	11.1	11.8	13.6	14.5	15.7	18.3	15.9	16.0	

Source: Kern County Fire Department.

KERN COUNTY PLANNING COMMISSION
July, 1975

KERN COUNTY
HAZARD AREA ZONING ORDINANCE
FLOODPLAINS
ILLUSTRATIVE RIVER CROSS-SECTION

APPENDIX 18



Note: FP-P Zone includes land necessary for future levees

APPENDIX 19

KERN COUNTY WATER AGENCY

Flood Control Reports published

1. Caliente Creek Stream Group Flood Control Report, dated March, 1972.
2. Pleito Creek Flood Control Report, dated April, 1973.
3. Sycamore Creek Flood Control Report, dated May, 1974.

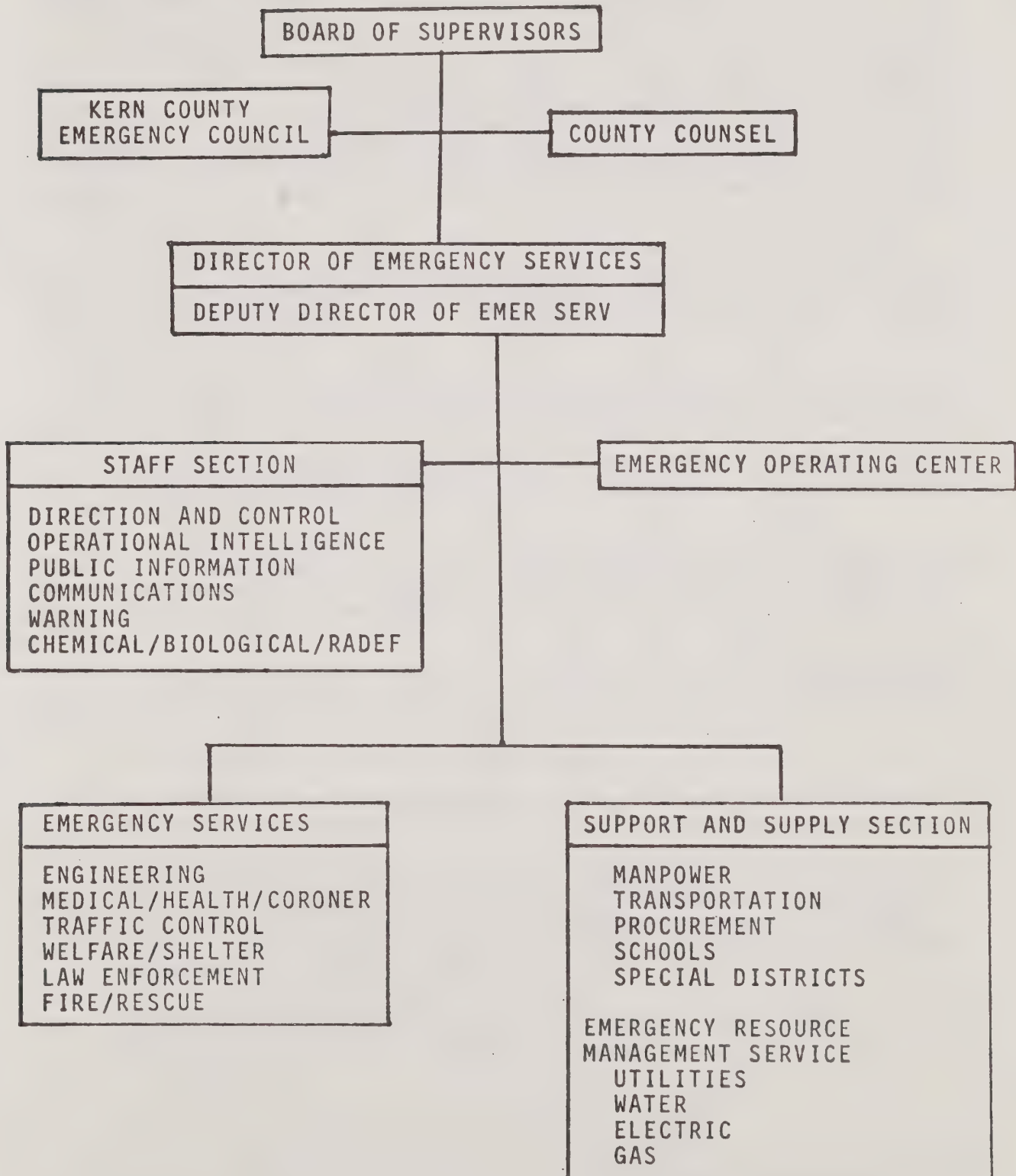
Flood Control Studies listed by priority

1. Arvin-Edison-Wheeler Ridge Water Storage District Streams.
2. Isabella Floodplain Information Study.
3. Kern River Floodplain Zoning.
4. Ridgecrest Floodplain Information Study.
5. Floodplain Zoning on all major drainage ways in Kern County. Stream priorities have not been set as of August, 1974.

APPENDIX 20

U. S. Department of the Army Corps of Engineers Flood Control Reports published:

1. Flood Plain Information, May, 1968
Kern River - Kernville, California
2. Flood Plain Information, October, 1969
Kern River - Bakersfield, California
3. Flood Plain Information, October, 1970
Sandy Creek - Taft and Ford City, California

COUNTY OF KERN
EMERGENCY ORGANIZATION CHART

APPENDIX 22

The following specific and detailed criteria shall apply within special studies zones and shall be included in any planning program, ordinance, rules and regulations adopted by Cities and Counties pursuant to said SPECIAL STUDIES ZONES ACT:

A. No structure for human occupancy, public or private, shall be permitted to be placed across the trace of an active fault. Furthermore, the area within fifty (50) feet of an active fault shall be assumed to be underlain by active branches of that fault unless and until proven otherwise by an appropriate geologic investigation and submission of a report by a geologist registered in the State of California. This 50-foot standard is intended to represent minimum criteria only for all structures. It is the opinion of the Board that certain essential or critical structures, such as high-rise buildings, hospitals, and schools should be subject to more restrictive criteria at the discretion of Cities and Counties.

B. Application for a development permit for any project (as defined in Section 2621.6) within a special studies zone shall be accompanied by a geologic report prepared by a geologist registered in the State of California, and directed to the problem of potential surface fault displacement through the project site, unless such report is waived pursuant to Section 2623.

C. One (1) copy of all such geologic reports shall be filed with the State Geologist by the public body having jurisdiction within thirty days following acceptance by the approving jurisdiction. The State Geologist shall place such reports on open file.

D. A geologist registered in the State of California, within or retained by each City or County, must evaluate the geologic reports required herein and advise the body having jurisdiction and authority.

E. Cities and Counties may establish policies and criteria which are more restrictive than those established herein. In particular, the Board believes that comprehensive geologic and engineering studies should be required for any "critical" or "essential" structure as previously defined whether or not it is located within a special studies zone.

F. In accordance with Section 2625 of the Public Resources Code, each applicant for approval of a project within a delineated special studies zone may be charged a reasonable fee by the City or County having jurisdiction over the project.

G. As used herein the following definitions apply:

1. A "project" includes any structure for human occupancy or new real estate development as defined under Section 2621.6 of the Public Resources Code.

2. A "structure for human occupancy" is one that is regularly, habitually or primarily occupied by humans; excluding therefrom freeways, roadways, bridges, railways, airport runways, and tunnels. The excluded transportation structures should be sited and designed with due consideration to the hazard of surface faulting. Mobilehomes, whose body width exceeds eight (8) feet, are considered as structures for human occupancy.

3. A "new real estate development" is defined as any new development of real property which contemplates the eventual construction of "structures for human occupancy."

APPENDIX 23

CLASSIFICATION OF CRITICAL FACILITIES

<u>Facility</u>	<u>Potential Effect on Loss of Life</u>	<u>Required for Community Functioning</u>
1. Fire stations		X
2. Hospitals	X	X
3. Police, Sheriff, C.H.P. offices		X
4. Schools (refuge centers)	X	
5. Community centers	X	
6. Radio stations		X
7. T.V. stations		X
8. Water works, incl. piping & pumping systems		X
9. Sewage treatment plants, incl. piping systems		X
10. Electric power plants, transformer stations, and transmission lines		X
11. Gas storage and distribution pipe lines		X
12. Highways	X	X
13. Railroads		X
14. Airports		X
15. Dams, aqueducts, canals	X	

APPENDIX 24

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- b. for water systems
- c. for drainage
- d. for streets
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- f. for subdivision impact study

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